



第2回

アジア未来会議  
優秀論文集



*Diversity  
&  
Harmony*

アジアの未来へ

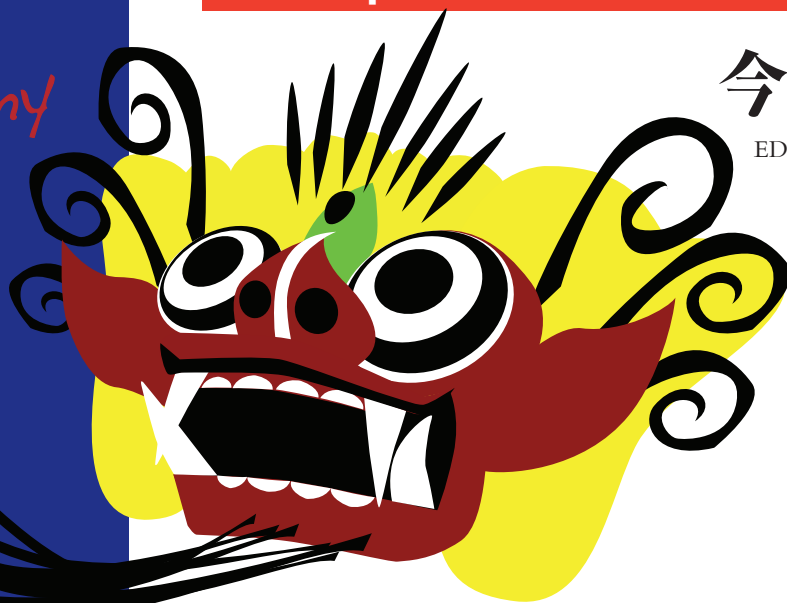
—私の提案 Vol.2

# TOWARD THE FUTURE OF ASIA: MY PROPOSAL

Best Papers of The 2nd Asia Future Conference

今西淳子【編】

EDITED BY Imanishi Junko



公益財団法人

渥美国際交流財団

関口グローバル研究会

Sekiguchi Global Research Association

Atsumi International Foundation

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Theme of The 2nd Asia Future Conference:  
DIVERSITY & HARMONY

第2回アジア未来会議テーマ：  
「多様性と調和」

公益財団法人  
渥美国際交流財団関口グローバル研究会  
Sekiguchi Global Research Association Atsumi International Foundation





# About the Aim of the Conference and about This Book

アジア未来会議の趣旨とこの『論文集』について

Junko Imanishi

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The twenty-first century has seen the world thrust into a maelstrom of change and unpredictability. We remain hopeful in the face of rapid technological advancements, but many of us struggle to regain our bearings as longstanding social structures become upended. Internationalization and globalization have long been heralded as the keys for the future, yet a truly global path forward remains elusive, serving only to heighten the sense of uncertainty. As global citizens in this era of change, we are called anew to reexamine our world and our collective future and to seek new multidimensional and inclusive perspectives on myriad global issues.

The achievement of rapid economic development has also led to dramatic changes in Asia. At the same time, a complex set of transnational problems have been brought about by global environmental issues and increased socioeconomic globalization. In the midst of an ever-expanding understanding of “society,” the global citizenry—individuals, governments, and the business community—must adopt policies that not only allow for the pursuit of individual interests but also respond to concerns for the peace and happiness of society as a whole. Solving these problems requires the development of multifaceted

21 世紀にはいつ世界全体に変革の嵐が渦巻き、人々は新しい技術に大きな期待を抱く一方、社会構造の激しい変化にとまどっています。国際化・グローバル化が唱えられて久しいのに、世界中で共有できる新しい方向性を見出すことができず、混乱は増すばかりです。このような時代においては、物事を新しい視点から複合的に分析し判断していくことが必要なのではないのでしょうか。しっかりした理念を持ち、それを如何に実践していくか、一人一人の意識の改革と行動が問われているのではないのでしょうか。

近年、アジアの各国は急激な経済発展を遂げていますが、地球環境問題の発生や社会経済のグローバル化の進展とともに、国境という枠組みを越えた問題が生じています。さらには、急激なグローバル化と同時に進むローカリゼーション、あるいはナショナリズムなど様々な問題が発生し、新しい課題となっています。社会の構成員である企業や市民は、個々の利益の追求と同時に、周辺社会の利益も検討しなければなりません。グローバル化が進む現代においては、従来の社会の範囲をさらに広げ、地球全体の平和と人類全体の幸福を目指すことが求められ

evaluative and analytical strategies with cooperation across national and disciplinary borders.

The Asia Future Conference is interdisciplinary at its core and encourages diverse approaches to global issues that are mindful of the advancement of science, technology, and business and also take into consideration issues of the environment, politics, education, the arts, and culture. The Asia Future Conference is organized by the Sekiguchi Global Research Association (SGRA) in partnership with like-minded institutions, in order to provide a venue for the exchange of knowledge, information, ideas, and culture, not only by SGRA members, but also by former foreign students of Japan from various educational institutions throughout the world, their own students and collaborators, and anyone interested in Japan.

SGRA began operating in Tokyo in July 2000 as a division of the Atsumi International Foundation, a charitable organization. At its core is a community of non-Japanese researchers who come from all over the world to conduct advanced studies in Japan and obtain doctoral degrees from Japanese graduate institutions. SGRA identifies issues related to globalization and seeks to disseminate research results to a wide audience through forums, reports, and the internet. SGRA's aim is to reach society at large rather than a specific group of specialists through wide-ranging research activities that are inherently interdisciplinary and international. The essential objective of SGRA is to contribute to the realization of responsible global citizens. We look forward to welcoming a diverse and active group of conference participants.

The 1st Asia Future Conference was held in March 2014 in Bangkok, and the 2nd Conference in August 2014. This book contains 18 Best Papers from 71 full papers submitted by February 28, 2014, to the Second Asia Future Conference. I hope that these ideas give some hints to search for new directions for the future of Asia.

ているのです。そして、様々な問題を解決する時、あるいは方針や戦略を立てる時、科学技術の開発や経営分析だけでなく、環境、政治、教育、芸術、文化など、社会のあらゆる次元において多面的に検討することが必要となっています。

アジア未来会議は、学際性を核とし、科学技術やビジネスの発展だけでなく、環境、政治、教育、文化芸術などからの多様なアプローチによってグローバルな諸問題に取り組むことを狙いとしています。アジア未来会議は関口グローバル研究会 (Sekiguchi Global Research Association : SGRA) が、同じ目的をもつ非営利のパートナー機関と共同で開催しています。SGRA 会員だけでなく、世界中の大学や研究機関に所属する日本留学経験者や、日本に関心のある人々が一堂に集い、知識、情報、アイディア、文化の交流を図りながらアジアの未来について語り合う〈場〉を提供することを目的としています。

2000 年 7 月から東京を起点として活動する公益財団法人渥美国際交流財団の一部署である関口グローバル研究会は、世界各国から渡日し長い留学生生活を経て日本の大学院から博士号を取得した知日派外国人研究者が中心となって活動し、グローバル化に関わる問題提起を行い、その成果をフォーラム、レポート、ホームページ等の方法で、広く社会に発信しています。ある一定の専門家ではなく、広く社会全般を対象に、幅広い研究領域を包括した国際的かつ学際的な活動を狙いとしています。良き地球市民の実現に貢献することが SGRA の基本的な目標です。

第 1 回アジア未来会議は 2013 年 3 月にバンコクで、第 2 回は 2014 年 8 月にバリ島で開催されました。この論文集は、第 2 回アジア未来会議開催にあたって、2014 年 2 月 28 日までに投稿された 71 本のフルペーパーの中から選出された 18 本の論文を掲載しています。このような提案が、アジアの未来への新しい方向性を探るヒントになることを願っております。

# CONTENTS

## 目次

|   |  |     |
|---|--|-----|
| Foreword<br>まえがき  | About the Aim of the Conference and about This Book<br>アジア未来会議の趣旨とこの『論文集』について<br>Junko Imanishi (今西淳子) | 4   |
| 基調講演 1  | ASEAN and East Asia in the Era of Global Restructuring<br>地球的再編時代におけるASEANと東アジア                        | 8   |
| Bilahari Kausikan (ビラハリ・コーシカン)  |  |     |
| 記念講演 1  | Shi-Shi and Barong: Kin or Coincidence?  | 20  |
| Margaret Coldiron (マーガレット・コールドアイアン)   |  |     |
| 記念講演 2  | ジャワのバティックからインドネシアのバティックへ   | 28  |
| 戸津正勝 (Tozu Masakatsu)   |  |     |
| Diversity in Harmony Multi-ethnic Architectural Conservation in an ex Colonized country:<br>Semarang, Indonesia case                  |  | 45  |
| Rudyanto Soesilo  |  |     |
| Teacher Educators' Extent of Cultural Awareness   |  | 51  |
| Prof. Joselito Castro Gutierrez, Danica M. Ticangen, Fara E. Bulcio, Hazel Ann C. Chopap-ing,<br>Jonah Rima A. Manzano, Jeah V. Sales |  |     |
| Happiness as Life Satisfaction and Human Flourishing: An Economic Perspective   |  | 63  |
| Jovi Clemente Dacanay   |  |     |
| Towards Expanding Access to Health Care Services:<br>A Policy Simulation of the Aquino Health Agenda in the Philippines               |  | 77  |
| Rachel Lynn Y. Belandres  |  |     |
| The Plight of the Informal Waste Sector (IWS) in the Philippines  |  | 87  |
| Grace P. Sapuay   |  |     |
| Harmonizing Diverse Perspectives on Environmental Issues<br>Toward A Unified Mitigation and Remediation Program                       |  | 95  |
| Christia Almario Guevara  |  |     |
| The Role of <i>Phragmites Australis</i> for Sludge Stabilization  |  | 101 |
| Rui Chen, Jiangang Li, Yuanchao Zhang, Yubo Cui   |  |     |
| Towards Green and Healthy Commercial Centers in Asian Cities:<br>Evaluating Sustainability of Green Open Spaces in Shopping Malls     |  | 107 |
| Marie Stephanie N. Gilles, Grace C. Ramos, PhD  |  |     |



|  |     |
|--|-----|
| <b>Agriculture, in Architecture, in Cities: In Pursuit of Sustainable Urban Landscapes</b>                     | 121 |
| Maria Mynn Porciuncula-Alfonso   |     |
| <b>Living Environment Evaluation of Japanese Residential Area in Kitakyushu Japan</b>                          |     |
| <b>Part 1: Survey Result and Statistical Analysis</b>  | 129 |
| Didit Novianto, Weijun Gao, Soichiro Kuroki  |     |
| <b>Cultural Farming Practices of Indigenous Cultural Communities:</b>  |     |
| <b>The Case of T'boli Farmers in Lake Sebu, South Cotabato, Philippines</b>                                    | 139 |
| Evelie P. Serrano, Rowena DT. Baconguis  |     |
| <b>Kapangan Indigenous and Sustainable Systems in Harmony with Mother Nature</b>                               | 149 |
| Jane Delfin Toribio, Ph.D., Atty. Roberto Kalaw Canuto   |     |
| <b>Investigation and Analysis of Electricity Tariffs in Japan, China and Thailand</b>                          | 159 |
| Qiong Wu, Hongbo Ren, Weijun Gao, Jianxing Ren   |     |
| <b>The Effects of Dynamic Pricing and Photovoltaic Technology</b>  |     |
| <b>on Cost Performance in a Residential House</b>  | 165 |
| Yao Zhang, XingzhiShi, Weijun Gao, Soichiro Kuroki   |     |
| <b>Needs of Support Considered from the Free Description of the Sleep Survey</b>                               |     |
| <b>for Normal Children and Disabled Children</b>   | 171 |
| Shimomura Akiko, Zhang Xiaochun, Tanaka Hideki, Morita Yoshio, Nishida Chinatsu, Nakano Michiko, Miyake Yasuko |     |
| <b>小学生の夜型化、イライラの改善に与える睡眠教育パッケージの効果—睡眠教育群と待機群の比較—</b>   | 179 |
| 田村典久, 田中秀樹 (Tamura Norihisa, Tanaka Hideki)  |     |
| <b>外交儀礼をめぐる衝突と調和—1873年の謁見問題を中心にして—</b>   | 189 |
| 白 春岩 (Bai Chunyan)   |     |
| <b>19世紀末中華世界における調和のための多様性—朝鮮の事例から—</b>   | 197 |
| 森 万佑子 (Mori Mayuko)  |     |

第2回アジア未来会議報告 The 2nd Asia Future Conference Report ■ 今西淳子 206

主催・共催・後援・助成・協力・協賛者一覧 213

アジア未来会議運営組織 214

# ASEAN and East Asia in the Era of Global Restructuring

地球的再編時代における ASEAN と東アジア

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The world is undergoing a profound transition of power and ideas. The modern international system was shaped by the West which prescribed its fundamental concepts, established its basic institutions and practices and influenced all major developments. That era is now drawing to a close. No one can predict the future and we do not know what will replace the western-dominated system. But we can at least glimpse some of the issues that will have to be confronted.

For the last two hundred years the core issue confronting Asia, Africa, the Middle-East and Latin America was how to adapt to a western-defined modernity. Only a handful of countries, almost all in East Asia, have successfully met the challenges. Ironically, the international system is now being transformed by the very transformations forced upon these countries by the western system. Japan led the way after the Meiji Restoration in the 19th century. But China is the most important example. What made the old system ultimately unsustainable was China's decision to abandon a dysfunctional planned communist economic system, embrace the market and integrate itself into the international economic grid. By transforming itself, China transformed the world. We will discover and live through the implications for the rest of this century.

世界は、パワーにおいても思想においても、根底からの転換期を通過しています。近代国際システムの基本概念は、西欧によって形作られ、基本的な組織や制度を規定し、その後のあらゆる発展に影響を与えました。そのような時代は今や終わろうとしています。未来は誰にも分からないし、西欧が支配してきたシステムに取って代わるのが何なのか分かりません。しかし、将来直面しなければならない課題のいくつかを垣間見ることは出来ます。

過去 200 年間にわたってアジア、アフリカ、中東、ラテンアメリカが直面した中心課題は、西欧に規定された近代性をいかに受け入れるか、でした。ごく少数の国がそれに成功しましたが、そのほとんどは東アジアでした。皮肉なことに、国際システムは今、西側システムに転換を迫られてきた国々によって、転換を余儀なくされています。日本は 19 世紀の明治維新を経てこの道を進んできました。しかし最も重要な事例は中国です。中国の古いシステムが維持できなくなったのは、機能不全の計画経済を放棄して市場を受け入れ、中国自身が国際経済の枠組みに統合されることを決めたからです。中国は自ら変わることで世界を変えました。私たちはこの意味を考えつつ 21 世紀のこれからを生きていくことになるでしょう。

主要国では国内でも地政学的にも、大きな調整が必

Major adjustments, both domestic in key countries and geopolitical, will be necessary. Since China was the catalyst, East Asia finds itself at the epicentre of the changes that are underway. Post-World War II East Asia is largely an American creation. The US provided the stability that was the foundation of decades of the region's growth and prosperity. The most difficult and wrenching adjustments will be between the US and China. Historically, all transitions from one type of international system to another either were the result of conflict or resulted in conflict. What is now being attempted is unprecedented in world history: to manage a transition without conflict.

Washington and Beijing are now groping towards a new *modus vivendi*. Neither finds it easy and establishing a new equilibrium will be a work of decades and not just a few years. Sino-US relations are already the most important bilateral relationship for East Asia, setting the tone for the entire region. As the 21st century progresses, Sino-US relations will become the most important bilateral relationship for the entire world influencing almost every aspect of international relations, just as US-Soviet relations did during the Cold War.

Rivalry is an inescapable element in any great power relationship. And all rising great powers are intrinsically revisionist, not necessarily by design but because their rise disrupts the existing order as an existential fact irrespective of their intentions. As China grows, it will inevitably become more assertive in pursuit of its interests. The signs are already evident. Competition and some degree of tension between the US and China is thus inevitable. But conflict between them is not inevitable.

Unlike in US-Soviet relations, there is no bitter, fundamentally irreconcilable ideological divide between the US and a China that has now enthusiastically embraced the market. The Soviet Union was containable because it largely contained itself by pursuing autarky. The US and the Soviet Union were linked primarily by the need to avoid mutual destruction. But China is now so vital a part of the world economy and the interdependence between the US and China so profound, that the US might as well try to contain itself as contain China, and China might as well try to exclude itself from East Asia as try to displace the

要となるでしょう。中国の変化をきっかけに、東アジア諸国は、いま起きている変化の中心に自分たちがいることに気づいています。第二次大戦後の東アジアは主にアメリカの創造物ですが、アメリカはこの地域の数十年間にわたる成長と繁栄の基礎となる安定を与えてくれました。最も難しくねじれた調整は米中間に存在することになるでしょう。歴史的にはすべての国際システムの転換は、紛争の結果か、結果的な紛争でした。しかし現在、試みられているのは、「紛争なしの転換」を管理するという世界史に先例がない事業です。

ワシントンと北京は新しいあり方を模索しています。どちらも容易に出来るとは思っていないし、新しい均衡は数年ではなく何十年もかかる仕事だと思っています。米中関係はすでに東アジアにとって最も重要な関係であり、地域全体の動向に影響を与えています。21世紀が進むにつれて米中関係は、冷戦時の米ソ関係のように、世界のほとんど全ての国際関係に影響を及ぼす最も重要な二国間関係になるでしょう。

どんな大国関係においても競争は避けられない要素です。そして、新興パワーは本質的に修正主義的ですが、それは必ずしもデザインがそうだからではなく、意図とは無関係に実存的な事実として、新興パワーの拡大が既成秩序を混乱させるからなのです。中国が成長するにつれ、利益追求に積極的になっていくのは明らかです。米中間の競争と、ある程度の緊張は避けられません。しかし、米中間の紛争は避けられないものではありません。

かつての米ソ関係とは異なり、米中はともに市場を積極的に受け入れており、米中関係には、原理的で和解不能なイデオロギー上の対立はありません。ソ連は自給自足を追求して自分で自分を封じ込めていたため、封じ込めることが可能でした。米国とソ連は相互の破壊を避ける必要で一致していました。しかし中国は今や世界経済の一部でとても重要であり、米中間の相互依存は非常に深いので、米国が中国を封じ込めようとすれば自分を封じ込めることになり、中国が米国の追い出そうとすれば、自分が東アジアから排除されることとなります。このような試みは無益です。米国も中国も、相互の協力なしにはそれぞれの基本的な国家目標を達成できないのです。



US. These would be exercises in futility. Neither the US nor China can achieve their basic national goals without working with the other.

This is a reality that neither finds particularly comfortable. Profound interdependence coexists with deep strategic distrust in US-China relations. Interdependence in fact enhances strategic distrust because it exposes mutual vulnerabilities, all the more so because China's rise has been psychologically disquieting to many in the West. China and some other East Asian countries are regarded as fundamentally challenging the western historical narrative because in East Asia and above all in China, the market economy flourishes without liberal democracy. This is regarded as somehow unnatural.

This is a view that ignores an inconvenient historical fact: every western country was capitalist long before it was either liberal or democratic. The form of democracy that developed in the West was the result of highly contingent historical processes that there is no reason to expect will be replicated anywhere else. But the perceived anomaly resonates with deep western anxieties because China, unlike, say Japan or India, only wants to be China and not an honorary member of the West.

The Chinese experience punctures the western myth of universality. This is a mode of thought that has its origins in monotheistic Christian traditions and is today deeply embedded in even the most secular of western societies. It lies at the heart of the western sense of self. Yet it is only a myth because our senses tell us that diversity is the most evident characteristic of the world we live in. Diversity is an empirical fact. Curiously, this is a fact celebrated by liberal thought domestically but denigrated internationally. A western defined universality could only be imposed in defiance of reality by western power and a dominance that is now ebbing. Of course all societies and cultures hold some values in common. But the commonalities are at such a high level of generality that they have little practical significance for how different societies organize themselves.

Except for a handful of countries mainly in the Middle East, every polity now legitimates itself by some variant of the 18th century western political philosophy that holds that sovereignty derives from the will of the people

これはどちらにも居心地の悪い現実です。深い相互依存と米中間の根深く戦略的な不信感が共存しているのです。相互依存は実際には、相互の脆弱性をさらしてしまうことで戦略的不信感を強めてしまいます。だからこそ中国の興隆は、多くの西側諸国にとって心理的に心穏やかなものでないのです。中国や東アジア諸国は、西欧の歴史的文脈に原理的に挑戦しているように見做されます。というのは東南アジアとりわけ中国で、自由と民主主義のない市場経済が繁栄しているからです。何か不自然だと看做されているのです。

しかし、これは不都合な歴史的事実を無視した見方です。それは、すべての西欧諸国は自由主義や民主主義である前から資本主義国家だったという事実です。西欧で発達した民主主義は歴史的な偶然の結果であり、他のどこでも複製できるとは思っていなかったという事実です。しかしながら、中国はたとえば日本やインドとは異なり、西欧の名誉あるメンバーとなることよりも「中国は中国」であることを望むゆえに、歴史の変則と看做され、西欧が深い憂慮を示すのです。

中国の経験は西欧の普遍神話を傷つけました。これはさかのぼれば一神教であるキリスト教に基づく思考様式であり、今でもほとんどの西側社会で、最も世俗的な社会にさえ深く浸透している自我意識の上にあります。これは神話です、なぜなら私たちは感覚的に、現代世界の最も明白な性格が多様性であると知っているからです。多様性は経験的事実です。不思議なことに、多様性は国内的にはリベラルな考えによって称賛されるけれども、国際的には過小評価されます。西欧の定義する普遍性は、西欧の力と優越が今や退潮していく現実を無視する中でしか実現できないでしょう。もちろんすべての社会や文化は共通する何らかの価値を持っています。しかし共通性には高いレベルでの普遍性があるので、如何に異なる社会を組織しているのかなど、実質的な特色はほとんどありません。

主に中東のいくつかの国々をのぞいて、今日、すべての政治体制は、神権や血統主義ではなく人々の意思によって主権が決定されるという18世紀の西欧諸国の政治哲学の何らかの変形によって構成されていま

rather than Divine Right or family bloodline. This is the fundamental basis of democracy. Yet it is evident that, for example, Japanese democracy is not the same as American democracy and American democracy is not the same as the different varieties of European democracy. And Japanese democracy is different from democracy as practised in other Asian countries say, South Korea, Indonesia, the Philippines, Singapore or Malaysia. But all democracies in every region validate themselves by the same 18th century philosophy; even the ‘peoples democracies’ of China and Vietnam share the same intellectual roots. None is perfect. But perfection is nowhere to be found this side of heaven and the theory they profess is at least the tribute vice pays to virtue. Democracy as was practiced in early 20th century America and Europe resembled democracy as practiced in Asia today far more than the West may care to admit.

These are not just abstract considerations because since the end of the Cold War the claim of the universality of certain principles and political forms has been used to justify western interventions to change regimes in North Africa and the Middle East. That all of these interventions have only resulted in greater instability has not forced any change of western rhetoric about universality, even if foolish talk about ‘the end of history’ has now been quietly smothered in an embarrassed silence and prudence has ensured that intervention in the name of universality has been deployed only against the small and weak. This has tempered but not erased anxieties that this approach has aroused in many countries, including China. Western leaders often posture for domestic audiences or to preserve their own self-esteem; but they do not sufficiently understand that words have strategic consequences.

The Chinese leadership is deeply concerned about maintaining internal stability which they equate with preserving the rule of the Chinese Communist Party (CCP). History has taught the Chinese leadership to fear most those historical periods such as they are now experiencing when internal unrest coincides with external uncertainty. With communism a bankrupt ideology, the CCP emphasizes nationalism and economic growth to legitimize its rule. But rapid growth inevitably raises social tensions and nationalism is a double-edged sword that the CCP knows can easily

す。これは民主主義の基礎的原理です。しかしながら、日本の民主主義がアメリカのそれと同じではないのは明らかであり、アメリカの民主主義もヨーロッパのさまざまな民主主義と同じではありません。また、日本の民主主義は、たとえば韓国、インドネシア、フィリピン、シンガポール、マレーシアなど、他のアジア諸国で営まれている民主主義とは異なります。しかしすべての地域のすべての民主主義が自分たちは同じ18世紀の哲学を実証していると考えており、中国やベトナムの「人民民主主義」でさえ、知的ルーツは同じだと考えています。しかし、どれも完璧ではありません。完璧ということは、この世のどこにもありません。彼らが言うセオリーとは悪徳が美徳に払った貢物のようなものです。20世紀初めのアメリカやヨーロッパの民主主義は、西欧が考える以上に、現在のアジアの民主主義と似ているのです。

これらのことは単なる抽象的思考ではありません。なぜなら、冷戦が終わってから、ある種の原則と政治様式は普遍的であるという主張が、北アフリカや中東の体制を変える介入の正当化に使われてきたからです。こうした介入は不安定さを強めましたが、普遍性についての西側のレトリックを何ら変えませんでした。「歴史の終わり (the end of history)」などという愚かな話が、今やしぼんで、普遍性の名のもとに弱小国のみに介入が正当化されてきたことが理解されたにも関わらず、です。このようなアプローチは中国を含む多くの国の不安を消しはしないものの、和らげる結果になりました。西側のリーダーたちは自国内の民衆や自身の自尊心を守るために、このような態度をとりますが、発言が戦略上重要な結果をもたらすとは思っていません

中国指導部は中国共産党 (CCP) の支配を保つことと同時に、国内の安定に非常に強い関心を持っています。歴史が中国指導部に教えるのは、国内的な不安定さが国外の不確実性と同時に起きているときに最も恐ろしい、ということです。共産主義が破綻したイデオロギーであるので、中国共産党は自分たちの支配を正当化するために、ナショナリズムと経済成長を強調しています。しかし急速な成長で社会的緊張が高まるのは避けられず、ナショナリズムはたやすく自分たちにも向かってくる両刃の剣であることを中国共産党は

turn against itself. The CCP is engaged in a delicate balancing act the continuation of which depends on the success of the new stage of ambitious reforms announced at last year.

China is unlikely to become a multi-party system but Chinese politics is becoming more normal. The days are long past when any Chinese leader, however powerful, can simply command. The Chinese system has become more pluralist with competing institutional and regional interests to be brokered in the context of public opinion easily inflamed and aroused through social media. China has 500 million netizens. Unfortunately, in the 21st century ‘normal’ politics is also all too often dysfunctional. This is a global phenomenon caused by the collision of the 18th century notion of the sovereignty of the people with 21st century communications technologies. Internet-based social media conflates the idea of ‘the people’ with the views of individuals or small groups; it confuses fact with opinion, devalues expertise and sets up dynamics that make governance more difficult. It remains to be seen how the CCP will cope.

Under these trying circumstances, the Chinese leadership can be forgiven for regarding western attitudes towards universality with grave suspicion. It is significant that the ‘new model of great power relations’ that China has proposed to the US has respect for ‘core interests’ as a central theme. Preservation of the CCP’s rule is certainly a core interest and who is to say that this is wrong? Political reform is difficult in any system. Given the traumatic experience of the former Soviet Union under Gorbachev’s ill-considered reforms, Chinese leaders are correct to be very cautious. It is not self-evident that a multi-party system is optimal for a country the size of China. A failed China would destabilize not just East Asia but the world.

At the same time, China’s leaders must understand that their own words and actions have strategic consequences too. If a successful peaceful transition requires the West to abandon a pretentious liberal democratic universality and admit that different political systems have their own legitimacy and intellectual validity, it also requires China to resist the temptations of triumphalist nationalism. This is particularly so because far more than other nationalisms, contemporary Chinese nationalism is outwardly directed.

知っています。中国共産党は、昨年発表した野心的な改革の新しい段階が、成功するかどうか微妙なバランスをとろうと行動しているのです。

中国は複数政党制にはならないでしょうが、中国政治はもっとノーマルになりつつあります。どんな中国の指導者でも力があれば統治できた時代は遠い昔のことになりました。中国のシステムはソーシャルメディアを通じて簡単にあおられる世論が、制度と地域の利害を競合させるなど、より複数主義となってきました。5億人のネット人口が中国にはいます。不幸なことに21世紀の「ノーマル」な政治はしばしば機能不全に陥ります。これは21世紀のコミュニケーション技術と18世紀の人民主権の概念の衝突による世界的な現象です。インターネットをベースにするソーシャルメディアは「国民の」意見と、個人や小さなグループの意見をごちゃ混ぜにしまい、事実と意見を混同し、専門家の価値を低め、統治をより困難にする原因となっていました。中国共産党がこれにどう対処するかが、今後も課題であり続けるでしょう。

こうした難しい状況の中で、中国指導部が西側の普遍性に強い懸念を抱くのも無理はありません。中国がアメリカに対して提案した「大国関係の『新たな形』」(new model of great power relations)は中国の「核心的利益」を尊重することを中心課題としているので重要です。中国共産党の支配の維持が核心的利益であると唱えることが間違っていると誰が言えるでしょう。政治改革はどんなシステムでも難しい。ゴルバチョフの思慮浅き改革の下での旧ソ連のトラウマ的な経験を考えると、中国の指導者たちが非常に慎重であることは正しい。中国のような大きさの国にとって、複数政党制が最適なシステムであるとは言えません。中国の失敗は、東アジアだけではなく世界を不安定にするでしょう。

同時に中国の指導部は、自分たちの言動が戦略的な結果をもたらしことを理解しなければなりません。もし平和的な体制移行が、西側に思い上がった自由民主主義の普遍性を捨てさせ、異なった政治体制であっても正当性と知的な妥当性があるのだと認めさせようとするならば、中国も勝利主義的ナショナリズムの誘惑に誘い込まれないようにすることが求められます。特に現在の中国のナショナリズムは、他のナショナリズムよりはるかに外に向けられているからです。



Chinese nationalism is today focused on Japan. The Chinese public is fed a steady diet of movies, TV dramas, documentaries and publications keeping alive and fanning bitter memories of the Second World War and Japanese atrocities in China. But it was not always so. On at least two occasions, to a Japanese socialist group in 1964 and to then Prime Minister Tanaka in 1972, no less a person than Mao Zedong himself brushed aside apologies for Japan's wartime record in China because, as Mao then said, it was with the "help" of the Japanese invasion that the CCP was victorious. In 1971, he told President Nixon much the same thing.

The CCP then based its primary claim to legitimacy on class struggle. It emphasized its defeat of the Kuomintang (KMT) rather than Japan, and indeed it was the KMT rather than the CCP that bore the brunt of the fighting against Japan with the CCP largely husbanding its strength for the post-war struggle for power. But once China embraced the market economy, this was no longer sustainable. And once the CCP decided in 2002 to allow businessmen working in private enterprises—capitalists by any other name—to join its ranks, class struggle lacked any credibility as a claim to legitimacy.

But as nominal communists the CCP cannot focus Chinese nationalism on China's long history. If the Imperial past was so glorious, why the need for a revolution? And the CCP's attitude towards its own revolutionary history and such episodes as the disastrous famine caused by ill-considered policies such as the Great Leap Forward and the many lives lost or wrecked by the Cultural Revolution and indeed towards Mao himself is ambivalent. Chinese nationalism must be directed outwards lest awkward questions be asked internally about the CCP itself.

There is no doubt that Japan did behave with great brutality during the Second World War, not just in China but in Southeast Asia. But keeping alive bitter memories when most of East Asia except Korea has moved on conscribes China's own room for manoeuvre and complicates the already complicated adjustments with the US, Japan's principal ally, that are necessary for a peaceful transition. Virulent nationalism casts a shadow over relations with the smaller countries around China's periphery where the sheer disparity of size and economic weight already causes anxiety.

今日の中国のナショナリズムは日本に向かっていきます。中国の民衆は、第二次大戦と中国における日本軍の残虐行為の苦い記憶を思い出させようとする映画、テレビ、ドラマ、ドキュメンタリー、そして書籍を与えられ続けています。しかし、いつもこうだったわけではないのです。少なくとも2回、1964年の社会党のグループ、そして1972年の田中首相のとき、ほかならぬ毛沢東は、日本側の戦時中の行為への謝罪について言及せず、日本の侵略の「助け」で中国共産党の勝利がもたらされた、と述べました。また、1971年にも彼はニクソン大統領に同じことを語っています。

当時の中国共産党は、主張の基本を階級闘争の正当性に置いていました。中国共産党は日本よりも、むしろ国民党 (KMT) に対する勝利を強調していました。実際、中国共産党は戦後の勢力争いに力を温存したので、日本との戦争で正面に立ったのは、むしろ国民党だったのです。しかしひとたび中国が市場経済を取り入れると、もはやそうも言っていられなくなりました。2002年、民営企業（なんと呼ぼうが資本家）に働くビジネスマンに党員資格を認めたため、階級闘争は正当性のよりどころとする信頼を失いました。

しかし名ばかりの共産主義者としても、中国共産党が、中国の長い歴史の中でナショナリズムに焦点をあてることは出来ません。もし帝国の過去が輝かしいものであったら、どうして革命が必要だったのでしょうか。共産党自身の革命の歴史や、「大躍進」のように誤った政策による悲惨な飢餓、「文化大革命」による多くの犠牲、毛沢東自身への批判、これらに対する中国共産党の態度は曖昧なままです。中国共産党自身に対して都合の悪い疑問が国内で出ないように、中国のナショナリズムは外に向かわなければならないのです。

日本が第二次大戦で中国国内だけでなく東南アジアでも非常に残忍な行為を行ったことに疑問の余地はありません。しかし、韓国以外のほとんどの東アジアの国々が（過去を乗り越えて）前に進みだした時に、苦い記憶を心に留め続けることは中国の行動範囲を限定し、複雑なアメリカ（日本の第一の同盟国）との平和的な移行に必要な調整を、さらに複雑なものにしています。有害なナショナリズムが中国の周辺の小さな国々との関係に影を投げかけています。そこでは国の大きさや経済的なウェイトでの不均衡が不安やリスク

eties and risks polarizing a region in which some Chinese actions in the East and South China Seas have led several countries to seek a closer relationship with the US. There is an ancient Chinese tradition that stresses the importance of the rectification of names. Wrong words lead to wrong deeds and risk making China's most serious concerns a reality. A more robust American posture in the South China Sea is already manifest.

It is entirely natural that any country will defend what it considers its sovereign rights. It is entirely natural that any country will want the best military force that it can afford because the ability to defend one's self is a vital attribute of sovereignty. I find nothing unusual in Chinese maritime claims in the East and South China Seas or in China's military modernization programme. What is critical is how a country defends its sovereignty and what use it makes of its military force. Will claims of sovereignty be pursued within common frameworks of norms, including procedural norms to change norms regarded as obsolete or unjust, or by unilateral actions based on superior force? The record is mixed and China has not behaved consistently. Great powers have a responsibility to reassure that China has only partly fulfilled.

Every Chinese schoolchild knows of the hundred years of humiliation that China suffered. The CCP is the latest iteration in a history of experimentation that began with the 'self-strengthening' movements of the 19th century. Since the fall of the Qing Dynasty in 1911, the Chinese have tried republicanism, communism and now the market economy in search of wealth and power to preserve China from foreign predations. This history has made the CCP a highly adaptive organization which unlike the former Communist Party of the Soviet Union, is not led by leaders in denial but by competent and rigorously tested cadres with a clinical appreciation of China's challenges. But permanently adopting the mentality and pose of victim ill suits a great power.

**I**t was never very realistic to expect China to be a 'responsible stakeholder' in a regional and global order that it had no say in establishing and which it holds responsible for a century of humiliation. It is natural for any rising power to want to revise an order to better reflect its interests. The US and its friends and allies in East Asia will have to accept

を高め、東シナ海、南シナ海での中国の行動は、いくつかの国がかえってアメリカとのより緊密な関係を模索する方向へ導いています。中国には昔から名称改正の重要性を説く伝統があります。間違った言葉は間違った行いを招き、中国が最も気にかけている現実へのリスクにつながります。しかし南シナ海におけるアメリカの強い態度はすでに明白です。

いかなる国も、自国の主権と看做すものを防衛するのは全く自然なことです。また、自衛能力は主権のための大前提であるから、いかなる国も、可能な限り最高の軍事力を持ちたいと思うのも全く自然です。私は、中国の東シナ海、南シナ海での海洋における主張、また軍の近代化計画は異常なこととは思えません。重要なことは、ある国がいかにその主権を守り、自国の軍事力を行使するかです。主権の主張は、共通の規範の枠組み（古くさい、もしくは正しくない規範を変えるための手続き的な規範も含め）でなされるのか、それとも優位な力による一方的な行動で示されるのかです。中国の過去の行動は矛盾しており、中国は一貫した行動を取っていません。大国には安心感を与える責任がありますが、中国はそれを部分的にしか満たしていないのです。

中国の学童はだれでも、中国が被った 100 年以上に及ぶ屈辱を知っている。中国共産党は 19 世紀の「自強運動」とともに始まった実験の歴史のなかの最も新しい繰り返しのひとつの例です。1911 年の清朝の崩壊後、中国は、外国の略奪から中国を守る富と力を求めて共和主義、共産主義を試し、そして今は市場経済を試しているのです。このような歴史によって中国はソ連共産党とは異なり、何事にも否定的なリーダーに導かれるのではなく、有能かつ厳しくテストされ、中国の課題を冷静に判断かつ前向きに評価している指導者に導かれる高い適応力のある組織になりました。だが永遠に犠牲者のメンタリティーとポーズをとることは、大国にはふさわしくありません。

中国が、地域秩序とグローバル秩序において「責任あるステークホルダー（保管人）」になると期待するのは決して現実的ではありませんでした。こうした秩序は中国の 100 年の恥辱に責任があり、中国にはこの秩序において発言権がなかったからです。勃興しつつあるいかなる国も、彼らの利害関係を反映させるべ

this new reality. No *status quo* is ever static and nothing lasts forever. At the same time, the current regional and global order has not been entirely unfavourable to China and at least over the last three decades has facilitated its rise. So there is no compelling immediate reason for China to kick over the table and seek radical revisions.

Setting aside the sovereignty disputes, what is most problematic is not that China is revisionist; it is that China is still overall a global free-rider on a system whose original creators and beneficiaries cannot now afford to maintain without help. The question that cannot now be answered is what price the West and in particular the US will be prepared to pay for help. Indeed, the Chinese themselves probably have not yet entirely settled on what price to ask and for what. This accounts for the many uncertainties of the transition and the inconsistency of Chinese foreign policy pulled this way and that by contradictory imperatives and the vagaries of domestic opinion no longer under control and which Chinese leaders both use and fear.

That said, sovereignty disputes do have a special resonance and arouse special sensitivities in China and across the region. In February this year, President Xi Jinping met Lien Chan the former Taiwanese Premier and Vice-President in what was hailed as the highest level exchange since Mao Zedong met Chiang Kai-shek in 1945. In a speech on that occasion that People's Daily published on its front page under the title "The Chinese Dream to Fulfill the Great Rejuvenation of the Chinese People Together," President Xi cast the meeting in the historical context of how Taiwan had been occupied by foreign powers when the Chinese nation had been weak in the past. Much of the speech was specific to Taiwan. But by casting reconciliation with Taiwan as an instance of the rectification of the historical injustices done to a weak China, it clearly suggested and left open a broader settling of accounts.

China is increasingly defining its claims in the East and South China Seas in terms of its historical rights. This is bound to raise anxiety levels even if China does not mean it in the same way as Taiwan. China has pledged that its development will be peaceful. It has carefully studied the experiences of Germany and Japan to avoid the mistakes that led both to disaster. There is no reason to disbelieve

く、今ある秩序を改善しようとするのは自然なことです。アメリカとその友好国及び、東アジアの同盟国は新しい現実を受け入れざるをえないでしょう。いかなる「現状維持」もそこに留まっていけないし、どんなものもいつまでも続きません。同時に、最近の地域的かつグローバルな秩序は決して中国に全く有利ではないというわけではありません。少なくともこれまでの30年は中国の発展を促したし、また机をひっくり返して過激な見直しを無理やり急ぐ理由も中国にはありませんでした。

主権論争はさておき、中国が修正主義的であることが最大の問題ではなく、中国は総合的に見て現在のシステム（創始者も受益者も、もはや何らかの支援なしにはこのシステムを維持できなくなっている）に、<sup>ただ</sup>只乗りしていることが問題なのです。今すぐ答えることはできない問題は、西側、特にアメリカが（システム）支援のためにどれだけ払う用意があるのかです。中国自身も実際、どれだけ、あるいは何のために、対価を要求するのかを、まだ決めていません。転換にあたっての多くの不確実性、中国の外交方針の一貫性のなさ、矛盾する法律体系、中国の指導者が利用し一方で恐れている国内世論のきまぐれさなども原因となっており、制御不可能な状況となっているのではないのでしょうか。

一連の主権論争は、中国並びに地域一帯に、特別な反響と、特別な感情を引き起こしています。2014年の2月、習近平国家主席は台湾の連戦・元副総統と会談しました。1945年に毛沢東と蔣介石が会談して以来の首脳会談とされます。この時に人民日報は一面で「中国人民が偉大な若返りを実現する夢」のタイトルで報じ、習国家主席は中国が過去、国家として弱体であった時、台湾がいかに外国によって支配されたかと、会談の歴史的な意味合いについて演説しました。演説の大半は台湾についてでした。しかし、台湾との和解を、弱い中国に行われた歴史的な不公正を修正する事例として明確に示唆し、その清算に関しては権利を留保するとしています。

中国は東シナ海、南シナ海での歴史的な権利の主張を徐々に強めています。これは中国が台湾の事例とは異なると言っても、不安のレベルを上げることとなります。中国は、中国の発展は平和的に行うと約束しています。また、大きな災厄に終わった日本とドイツ両国との経験も注意深く学んできています。中国がアメリカとの紛争で何かを獲得しても、行き詰まりが中国



China as a conflict with the US can in all probability only have one outcome and even a stalemate will risk the CCP's grip on power. In international law, history has a role in claims over territory but not over maritime claims. And history alone is not an appropriate criterion to settle sovereignty disputes because it is always subject to multiple interpretations and interpretations are constantly being revised as new facts come to light and interests change. But Chinese leaders seem trapped by their own narratives.

The Chinese government and people are rightly proud of what they have achieved. Never before in history have so many people been lifted out of poverty in so short a time. Still it would be a dangerous mistake to try to understand the complex global and regional transitions that are underway by simplistic and propagandistic slogans. Some Chinese intellectuals and even some officials occasionally come perilously close to boasting that 'China is rising, the West is declining'. But the changes in the distribution of power that are occurring are relative not absolute. The global patterns of trade, finance, investments and production chains that have evolved as a result of East Asian growth cannot be characterized by geographically defined dichotomies. Many economic roads now pass through China and many more will in the future. Nevertheless the final destination is still more often than not the US or Europe. China is certainly rising. It is always a mistake to believe one's own propaganda and the West and in particular the US is not declining. All who have underestimated American creativity, resilience and resolve have had cause regret it.

The East Asia that is growing is in any case is an East Asia that has been profoundly influenced by contacts with the West. The most successful East Asian countries, China included, are those who have most thoroughly adapted to a western-defined modernity. This has enabled some of us, again China included, to 'leave Asia and join the West' as was the ambition for Japan of Fukuzawa Yukichi, the Meiji era reformer. Of course, this does not mean that any of us must replicate without modification western institutions, uncritically adopt western ideologies or sacrifice core cultural identities.

The meaning of what we understand to be 'the West' is evolving under the pressures of a growing East Asia. China's rise is forcing a reappraisal of the way western

共産党の権力基盤を脅かすかも知れないと信じていないという理由はありません。国際法では、歴史は領土上の異議申し立てにあたっては意味があるが、海洋上の異議申し立てに対しては意味はないとされます。そして歴史だけが主権論争を解決する適当な判断基準ではなく、主権論争は常に多数の解釈を求めるものであり、その解釈は新しい事実が出てきたり、利害関係が変わったりするたびに変更されています。中国の指導者たちは、自ら自分たちの言説にとらわれてしまっているように思えるのです。

中国の政府と人民がここまで勝ち取ってきたことに對して誇りを持っているのは正しい。歴史上、これほど短い期間に、これほど多くの人民が貧困から脱したことはありませんでした。それでも単純化され宣伝色の強いスローガンによって、複雑なグローバルかつ地域の変化を理解しようとすることは危険です。中国の知識層、あるいは役人の一部でさえ「中国は勃興し、西側は没落する」と自慢する人がいます。現在、起きている力関係の変化は相対的なものであり絶対的なものではありません。東アジアの成長の結果として発展してきた貿易・金融・投資・生産チェーンのグローバルなパターンは、地理学的に規定された二分法では説明できません。多くの経済的な道が中国を通過しており、さらに増えて行くでしょう。にもかかわらず、多くの場合、最終の目的地はアメリカやヨーロッパではありません。中国は確かに発展しつつありますが、スローガンを信じることは誤りです。西側、特にアメリカは没落してはいませんし、アメリカの創造性、回復力、決断力を過小に評価したものはこれまでもすべて後悔してきました。

成長しつつある東アジアは、いかなる場合でも西欧との接触によって、大きな影響を受けてきました。中国を含む東アジア諸国のなかで最も成功した国は西欧が規定する現代性に適応した国々である。われわれの中には、中国を含めて、日本の明治時代の改革者である福沢諭吉の日本の野望としての「脱亜入欧」という言葉が根付いています。もちろん、誰もが西欧の制度を改良もせず模倣するとか、無批判に西欧のイデオロギーを採用せねばならないとか、核となる文化的アイデンティティーを犠牲にせねばならないという意味ではありません。

私たちが理解する「西側である」という意味は、成長する東アジアのプレッシャーの下で変化していま

countries view issues like Tibet and Taiwan, particularly in those European countries that look to China cap in hand for help in a time of austerity. In a very tentative and as yet inchoate manner the internal structural changes imposed by the new world economy is even forcing some in the west to ask themselves if liberal values taken to extremes have not become self-subverting. We have all changed. There can be no 'clash of civilizations' because no traditional civilization exists anywhere in pure form, except on the inconsequential periphery. It is not as if the western system will be suddenly and cataclysmically displaced by an Asian system.

A multidimensional process of social, economic, political and cultural metamorphosis has been underway and gathering force in East Asia since the Meiji Restoration. The road has not been smooth and there will be many an unpredictable twist and turn yet to come. But the trajectory has been set and it is now hesitantly spreading beyond East Asia. Once the metamorphosis is complete, there will be a new hybrid, that is to say the new world system. How long this will take, what specific institutional forms it will take, what collateral damage may be incurred along the way, and what the ultimate implications will be for international relations, no one can now say with any certainty.

But in East Asia it has already made the strategic environment more complex and unpredictable. The tensions over maritime claims are obvious symptoms. But these issues will not be the only or most serious manifestations of the new strategic complexities. US-China relations are at the centre of the necessary adjustments and complexities. But Sino-Japanese relations, Japan-Korea relations and Sino-Indian relations also require adjustments and are particularly sensitive, replete with ambushes laid by their long and complexly interwoven histories. Southeast Asia too has its own complications that require careful management.

There are no easy solutions. Still if there is one factor that distinguishes East Asia from all other non-western regions, it is East Asia's commitment to growth. Of course all countries in every region profess growth as a priority. Few really mean it. But in East Asia, with the exception of North Korea, growth as much as any abstract political theory is the primary means by which governments legitimate their

す。中国の台頭は西側諸国、特に緊縮財政で中国の援助をあてにして謙虚になっているヨーロッパ諸国に、チベットや台湾問題のような課題に対する見直しを迫ることになりつつあります。まだ暫定的で初期的な段階ですが、世界経済によって引き起こされた内部的な構造変化は、西欧に対して、もしリベラルな価値が極限に達した時には自己破壊に至ってしまうのか、と自問することさえ強いています。私たちはみんな変わりました。周辺の重要でない一部のところを除けば、純粹な形で伝統的な文明などないのですから「文明の衝突」はありません。そして、アジアのシステムによって西欧のシステムが突然、地殻変動を起こし、取って代わられたりするようなこともないでしょう。

明治維新以来東アジアでは、社会・経済・政治・文化など多次元における変化が進行しています。その道のりはスムーズではなかったし、これからも予期しない紆余曲折があるでしょう。しかし道筋は定まっております、つまりきながらも東アジアを超えて広がっていくでしょう。ひとたびこの変容が完結すれば、新しい交配種が生まれます。それはいわば新しい世界システムです。どれだけ時間がかかるのか、どんな制度上の形をとるのか、その道筋にどんな副次的な弊害が起こるのか、国際関係が最終的にどんな関わり合いになるのか、これらに確信を持って答えられる人は誰もいません。一方で東アジアでは、より複雑で予測できない環境がすでに作り上げられています。海洋上の主張をめぐる緊張は明らかにこの兆候です。しかし、これらの問題だけが深刻で新しい戦略的複雑さの兆候ではありません。米中関係は調整が必要な複雑さの中心です。しかし日中関係、日韓関係、中印関係も調整を必要とし、長く複雑に織り込まれた歴史的要因に満たされており、極めて微妙な関係にあります。そして、東南アジアにも、注意深いマネジメントが必要な独自の複雑さがあるのです。

簡単な解決策はありません。それでも、もし東アジアと他の非西欧諸国を分ける要素があるとすれば、それは東アジアの成長に対するコミットメントです。もちろんどの地域でもすべての国が成長を優先しています。しかし達成できている国は少ない。東アジアでは、北朝鮮を例外として、「成長」は抽象的な政治信条と同様、彼らの統治を正当化する主要な手段です。これは平和を保障するものではありませんが、少なくとも東アジア諸国の政府は、成長を壊すような行動は

rule. This does not guarantee peace. But East Asian governments at least have a strong self-interest to minimize actions that could disrupt growth. And I take comfort in the fact that self-interest is the most sincere form of interest. The primary risk is conflict by inadvertence not war by design.

This is not a risk that can be entirely discounted. And recent actions in the East and South China Seas have increased the probability of accidents. This underscores the continuing critical importance of the US presence to maintain stability. Nothing can replace it. China is not ready and even if it were, it is not entirely clear that it would be in its interest to do so. Without a strong US presence in East Asia and a credible alliance with the US, Japan could well become a nuclear weapon state. It has the capacity to do so very quickly. But at the same time, there is a consensus across East Asia, including among US friends and allies, that some new architecture is now needed to supplement the US presence to maintain stability.

This broad consensus does not in itself prescribe a solution and the debate over a new East Asian architecture itself reflects the stresses and rivalries it seeks to mitigate. Many of these fault lines converge in Southeast Asia and the Association of Southeast Asian Nations (ASEAN) finds itself at the centre of this debate, subject to multiple pressures from major powers. Two competing visions of regional order are in play: a Sino-centric vision built around the ASEAN plus Three (APT) forum which comprises the ten South-east Asia states with China, Japan and South Korea, and a broader and more open architecture built around the East Asia Summit (EAS) which is the APT with the addition of the US, Russia, India, Australia and New Zealand.

Given the growing centrality of East Asia in the world economy and the strategic weight of the US and China, the outcome of the debate over a new East Asian architecture will be the single most important influence on the global architecture of the 21st century. This is the strategic significance of what has been dismissed by western observers who do not really understand what they observe, as talk shops. No option has yet been foreclosed. Both the APT and EAS are experiments. But China's preference is clear.

最小限に留めようとする強い意志を持っています。自己利益というのが、最も誠実な利益の形であることに私は慰めを覚えます。主要なリスクは計画された戦争より偶発的な小競り合いです。

これは無視できるようなリスクではありません。最近の東シナ海、南シナ海の行動は偶発事故の可能性を高めています。これは地域の安定維持のためには、アメリカのプレゼンスが死活的に重要であることをはっきりと示しています。アメリカに代わるものはありません。中国は準備ができていないし、もしできていたとしても、行動することが中国にとって利益かどうかははっきりしません。東アジアにおけるアメリカの強いプレゼンスとアメリカとの確かな同盟関係がなかったなら、日本は核保有国になっていたでしょう。日本は非常に早く核保有国になる力を持っています。しかし同時にアメリカの友人、同盟国を含む東アジアにおいて、安定を維持するアメリカを補完する何か新しい知恵が今や必要となっているというコンセンサスがあります。

この幅広いコンセンサスも、それ自体解決策を示すものではなく、新しい東アジアの構築の議論自体、それを和らげるべき緊張や敵対意識を反映しています。これらの多くの断層が東南アジアに集中しており、東南アジア諸国連合 (ASEAN) も、自分たちが議論の中心であり、主要大国からのさまざまなプレッシャーの対象であることを知っています。この地域の秩序に関しては二つの対立する見方があります。ひとつは中国中心の APT(ASEAN + 3) フォーラム、即ち中国、日本、韓国を含む東南アジアの 10 か国。もうひとつは APT にアメリカ、ロシア、インド、オーストラリア、ニュージーランドを加えたより幅広くオープンな東アジアサミット (EAS) を中心にしたものです。

世界経済の中で東アジアが成長の中心であり、米中の戦略的な重みが増すとすれば、新しい東アジアの構築に関する論争は、21 世紀のグローバルな構築に最も重要な影響を及ぼすことになるでしょう。わかってもいない西側のオブザーバーたちからは「おしゃべり屋」と片付けられてきましたが、これは戦略的に極めて重要なことです。どんな選択も排除されてはいません。APT も EAS も実験です。しかし、中国の方向性は明白です。

At a Special China-ASEAN Foreign Ministers' Meeting held in Beijing in August 2013, China proposed an ambitious and detailed agenda of political and economic projects. These will undoubtedly benefit the region. But if taken to fruition will also have the effect of binding South-east Asia and South-western China into one economic and strategic space. Japan and South Korea will then have the Hobson's choice of going along or being relegated to the periphery with the US. China has proposed an Asian Infrastructure Investment Bank to finance these projects, some of which are already in the process of implementation. On a broader scale, the BRICS Development Bank which will be headquartered in Shanghai may be intended to perform an analogous function. What the BRICS have in most in common apart from a desire for a greater global role for themselves and hence a vague desire for 'multipolarity' in the international system, is the growing depth of their relations with China, particularly economic relations. So if multipolarity is ever established, it may well be 'multipolarity with Chinese characteristics' in which all other BRICS are junior partners.

## POSTSCRIPT

The Chinese government and people are rightly proud of China's great achievements over the last three decades. Never before in human history have so many people been lifted out of poverty in so short a time. It has benefited the entire region. But the line between justifiable national pride and arrogance is a fine one. I believe that China's leaders have a realistic appreciation of how much further China has to go. They are sincere when they pledge that China's development will be peaceful. But some Chinese officials and intellectuals sometimes assume a neo-Dullesian attitude of 'if you are not with me, you are against me' and regard anything less than unquestioning agreement as unfriendly. They do not serve China well.

2013年8月、北京で開かれた中国とASEANの特別外相会議で、中国は政治・経済のプロジェクトの野心的かつ詳細なアジェンダを提案しました。このアジェンダは疑いなくこの地域の利益になります。もし実り多いものになれば、東南アジアと中国南西部をひとつの経済圏、戦略的空間に結びつける効果をもたらすでしょう。そうすると日本と韓国はこの枠組みに入るのか、米国とともに周縁に放り出されるのか二者択一（Hobson's choice）を迫られます。中国は、それらのプロジェクトへの融資機関として「アジア・インフラ投資銀行」の創設を提案し、そのいくつかはすでに実行段階に入っています。より大きなスケールでは、上海に本部を置く「BRICS 開発銀行」が似たような役割を果たすことになるでしょう。BRICSに共通しているのは、自分たちの、より大きな役割を求めることではなく、国際システムで「多極性」を求めることでもなく、中国との関係、特に経済関係をより深くすることである。だからもし多極性が確立されたなら、それは「中国の特性を持つ多極性」であり、そこではBRICSの他のメンバーは従属的なパートナーになるでしょう。

## あとがき

中国の政府、国民は過去30年の偉大な達成を誇りに思っています。人類の歴史でこれほど多くの人民が、これほど短期間に貧困から救われたことはありませんでした。これは地域全体に恩恵をもたらしました。しかし正当な国家的プライドと傲慢さの差は紙一重です。私は、中国の指導者は、中国が更にどこまで遠くに行かねばならないのか現実的な認識を持っていると信じています。彼らが中国の発展は平和的でありたいと誓う時、彼らはまじめです。しかし、新ダレス的（ダレス元米国務長官）な態度を取る一部の役人や知識人がいます。すなわち「君が僕につかないのなら、君は僕の敵だ……」というような。そして疑いのない同意以外は非友好的と看做すのです。彼らは中国のために必要な役割を果たしてはいない、と言わざるを得ません。

《日本語翻訳及び日本語文責：AFC 事務局》



# Shi-Shi and Barong: Kin or Coincidence?

獅子舞はアジア全体でみられ、中国が発祥の地とされているが、日本の獅子とバリ島のバロンは明らかに中国の獅子とは違っており、共通の類似点を持っている——。

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## Introduction

Variations on the so-called ‘Lion Dance’ exist throughout Asia and are generally assumed to derive from the Chinese Lion Dance performed at Lunar New Year celebrations in Asia and in Chinatowns throughout the world. However, my research indicates that the Japanese Shi-Shi and the Balinese Barong are tangibly different from the Chinese, Korean and Tibetan variants from which they are often supposed to have derived. Moreover, there is evidence to indicate that some of those things that distinguish them from the Chinese model also demonstrate a link between these geographically separate but spiritually similar traditions. In this paper I will examine the case for kinship between Shi-Shi and Barong and seek to find points of contact that might help to explain how two such similar practices can have evolved thousands of miles apart. My research has examined shared elements of culture and found some tantalising possibilities of contact and cross-fertilisation that might indicate that the masks are related and that their similarities indicate not coincidence, but kinship.

Apart from my own article on iconographic simi-

larities between Japanese and Balinese ritual masks,<sup>1)</sup> there is not a great deal of literature comparing Shi-Shi and Barong. However Jane Belo’s 1949 study of the exorcistic ritual drama *Rangda and Barong* suggests:

“It is a possibility, presented here only tentatively for lack of supporting evidence, that the masked figure of the Rangda was elaborated out of the Durga worship belonging to the Sivaite tradition, while that of the Barong developed in a parallel line from some form of the Buddhist worship. This hypothesis is not belied by the existence in China and in Japan of dragon [sic] masks, closely resembling the Balinese Barong in structure, function, and behaviour—playing in the villages at New Year’s, for example—for it might have been on a wave of Buddhism that the idea of the Barong reached all three countries. The lion-like mask, the body animated by two or more players, the function of the performance as an exorcism for the protection of the village, the giving of food and coins to him in return for his protection, these are com-



mon elements found in China and Japan as well. It is quite conceivable that the mask play, travelling with Buddhism, was diffused over this wide area. [ . . . ] The antagonism, then, of Rangda and Barong when they meet and match their supernatural powers in the Balinese play could contain the deeper symbolic meaning of the rivalry of the Sivaite faith with the earlier entrenched Buddhism.” (Belo 1949: 32-3)

So here is our first hint of a connection—the association of Barong with Buddhism. Belo goes on to mention comments made by a Japanese anthropology student who, having seen Belo’s films of Barong, remarked on the similarity of the dance to the Shi-Shi Mai performed in his own village in Japan, and Belo herself notes the iconographic similarities between the two masks. She points to “contact between Indonesia and China. . . established in Han times” (Belo 1949: 33) and the well-known connection between China and Japan as a possible explanation for the similarity. In this, she appears to assume that the Barong and Shi-Shi both derive from Chinese sources. Unfortunately, this is as far as the dis-

cussion goes, but a number of other sources point to a possible link between Japan and Bali through Buddhism and my research indicates that there are similarities in form, function and spiritual significance that link Shi-Shi and Barong.

## Syncretism

In popular literature Bali is generally identified as an enclave of Hinduism in the vast sea of Islam that is the rest of Indonesia, but this rather sloppy description ignores the extraordinary complexity of religious and cultural practice in Indonesia in general and Bali in particular. Balinese religion is a syncretic blend of Hinduism, Buddhism and local animist practices that makes any simple comparison with practices elsewhere very difficult. The myths, stories and archaeological evidence that have come down to us from the earliest known history of Bali demonstrate the powerful influence of both Hindu and Buddhist rulers in shaping the culture of this island and it is here that we may find some connections between Shi-Shi and Barong.

One important coincidence in the two cultures is





the syncretic nature of religious practice. Therefore, just as Barong performance is situated in the liminal space between animism and Hindu-Buddhist practice in Bali, so *Shi-Shi Kagura* functions within the liminal space between Shinto and Buddhist practice and is especially associated with the syncretic *Shugendô* sect. (Kárpáthy 2000: 110) This is a point I will return to later.

## Iconography

Let us begin by looking at the masks themselves to see whether they have any ‘family resemblance.’ Neither the Shi-Shi nor the Barong look much like lions, and certainly not at all like the popular images of the African lion. Since there are no lions in either Bali or Japan it is hardly surprising that the species of animal is somewhat ambiguous. However, they do look like some kind of wild animal. *Shi-Shi Mai* is generally translated into English as “Lion Dance,” but in ancient Japanese the term *shi-shi* “designated edible wild animals, such as wild boars or deer. [. . .] Shishi dances of various types—native deer or wild boar dances, imported lion dances, and a combination of them are among the oldest in recorded history.” (Ortoloni 1990: 26; Sakurai 1988: 138) Thus,

it is possible that the *Shi-Shi Mai* and *Shi-Shi Kagura* may pre-date any contact with the Chinese lion dance.<sup>2)</sup> Both the Shi-Shi and the Barong can come in various shapes and, before mass tourism turned the dances into sightseeing attractions, there was abundant evidence of a variety of creatures classed as Shi-Shi or Barong. The *Shi-Shi Kaikan* in Hida-Takayama has over 200 examples of *Shi-Shi gashira* shaped like lions, dogs, pigs and even some with horns that might be taken for a particularly fierce deer. Beryl de Zoete and Walter Spies in their seminal study of *Dance and Drama in Bali* mention several types of Barong including *Lembu* (cow), *Macan* (tiger), *Gajah* (elephant) and *Bangkal* (wild boar) as well as the best-known *Barong Ket*, which is held to be “magically powerful to a very high degree” but does not resemble any known animal. (de Zoete and Spies 1938: 91) In addition to this diversity of forms, the masks have a number of other things in common:

- The predominant colours are red, black and gold.<sup>3)</sup>
- They have prominent, bulging eyes and large teeth or tusks.
- The masks’ expression, while fierce, is also friendly.
- Both Shi-Shi and Barong have a moveable jaw

or a loose wooden tongue that allows the mask to make a very expressive ‘clacking’ sound during performance.

## Circumstances of Performance and Ritual Function

Both Shi-Shi and Barong performances are associated with seasonal folk and religious rituals. The creature goes from house to house, often accompanied by a small musical ensemble, and performs for householders to chase away demons and bring good luck. The *Shinzei kogakuzu* features illustrations of Shi-Shi Mai “which depict a man leading a lion by a rope and accompanied by two children and musicians.” (Nishikawa 1978: 94). The Balinese Barong processions that take place during the Galungan period (when the deified ancestors are welcomed) are remarkably similar with children, sometimes in masks, going from house to house with their small Barong, playing gongs and drums to accompany the dance.

There are, of course, more formal performances such as the Barong dances held in conjunction with temple ceremonies and the *Shi-Shi Kagura* that is performed at shrines and temples. The appearance of Barong or Shi-Shi in these circumstances is both auspicious and exorcistic and the mask itself is regarded as the seat of the deity and revered as the god incarnate. These sacred masks are usually kept in the temple or shrine and brought out to dance only on important and auspicious occasions. (Kárpáthy 2000: 116; Sakurai 1988: 141; Hobart 2003: 131-2) They may also be used for exorcism and healing. (Neumann 2008; Ortolani 1990: 26; Hobart 2003: 157).

## Buddhism

While it is possible that both Shi-Shi and Barong may derive from indigenous exorcistic practices that predate the arrival of Buddhism in these two cultures, it seems more than coincidence that these masks have

strong associations with Buddhism. Most historians tell us that Buddhism came to Japan via China and the Korean peninsula from around the 7<sup>th</sup> century CE, but did not really begin to take hold until the 8<sup>th</sup> or 9<sup>th</sup> century (Tazawa et. al 1973: 21-26) with the arrival of the *Shingon* and *Tendai* esoteric sects. At about the same time the first evidence appears of Mahayana Buddhism being officially established in Bali (Pringle 2004: 44-45). In both cases it was esoteric or Tantric Buddhism that exerted the most powerful attraction for the local populations.

What, then, is the connection between esoteric Buddhism and these dances? In the course of my researches I had a look at the Nô play *Shakkyo*, known in English as *The Stone Bridge*. This play is performed by all five schools of Nô and, while there are some slight variations between the schools, the story basically runs like this:

“A priest goes to China to visit famous Buddhist places. One day, he is about to cross a stone bridge across a ravine when a child [or a woodcutter] appears. He hears from him that the land on the other side of the bridge is the Paradise of the deity Monju Bosatsu; even famous priests in olden times could only cross it after long and severe religious training. Telling the priest that if he waits by the bridge he will see something wonderful, the child disappears. After a while, a lion emerges and gambols and dances among the peony flowers.” (O’Neill 1953: 158-9)

This dancing lion is a manifestation or incarnation of Monju, also known as Manjusri—the bodhisattva of wisdom—and is generally depicted in art as a handsome young man whose mount is a lion. This depiction demonstrates the triumph of wisdom in training the mind. Monju is one of the sixteen great bodhisattvas of the Shingon sect of Buddhism in Japan. As Manjusri, he was also particularly revered by the Sailendra rulers of 8<sup>th</sup> century Java who reigned over the seas of Southeast Asia. There is evidence





that the influence of the Sailendra Dynasty spread as far north as Cambodia, and they regularly sent trade embassies to the Chinese emperor's court. (Zakharov 2012: 20) They also built the Sewu temple near Prambanan in Central Java, which is dedicated to Manjusri.

Around the year 914 CE, the Sailendra king, Sri Kesari Warmadewa led a military expedition to Bali to establish Mahayana Buddhism on the island, and we know this because he had a pillar erected to tell of his success. The revered Belanjong Pillar, with inscriptions in Sanskrit and Old Balinese, stands in an enclosure here in Sanur, about five minutes' drive from the Bali Beach Hotel. Historians take the pillar as evidence of a society on Bali that was already practicing Saivite Hinduism alongside esoteric Buddhism. (Hobart et. al. 1996: 141; Pringle 2004: 44-46) It is not difficult to imagine that the new Buddhist rulers of Bali, devotees of Manjusri, might organise propitious and purificatory performances of a 'lion dance' to celebrate setting the island of Bali on the path to wisdom and enlightenment.

Since there are no lions in either Bali or Japan it is hardly surprising that the species of animal is somewhat ambiguous. In any case, the mask is not meant to literally represent a lion, but rather to be

a manifestation of the attributes represented by the bodhisattva. Indeed, in both Balinese and Japanese practice the mask is not just a costume, but is the actual deity incarnate. The *Shi-Shi Kagura*, mask is not just a *gashira* or 'head', but *gongen*, that is a manifestation or incarnation of the deity. In Bali 'Barong' is a generic term for the mask or the performance genre, but an individual mask is referred to as *Bhatara*, given an individual name and revered as the embodiment of the deity possessed of great spiritual power.

### The Construction of the Beast: Mask and Costume

The creation of the body and mask of the Balinese Barong happens on sacred ground, in the village temple, and is extremely complex and detailed. At every stage, from harvesting the wood for the mask to the final stages of painting and adding exterior decorations, many offerings are given to propitiate negative spirits that might disturb the work and to honour the powerful spirit who will inhabit the Barong. Both mask and body display symbols and ornaments that are designed to indicate and impart great spiritual power. The *kembang bajra* (flower trident) that sits

atop the mask's head, "signifies Siwa's trident" but also represents the *vajra* or thunderbolt of enlightenment in esoteric Buddhism; between the eyebrows is the "two-petalled lotus. . . [that] signifies spiritual insight that can be used as an outward galvanising force." (Hobart 2003: 146) The body of the Barong is made from a rattan-mesh and bamboo frame over which is hung a red cloth and, eventually, a string mesh to which is attached a shaggy coat made of the fibres of pandanus leaves, heron feathers or (rarely) horsehair. The head and coat are then decorated with gilded leather ornaments "embellished with small pieces of mirror and coloured glass." (Hobart 2003: 138-147) Importantly, the Barong Ket is also given a beard made of human hair, donated voluntarily by a pre-pubescent girl. This powerful element of the mask is used for purification, healing and to bring people out of trance in exorcistic ceremonies. Once the mask and body have been separately assembled, there are further ceremonies for charging the mask with supernatural power, which take place in the cremation grounds—a favourite locale for Tantric rites. There are additional ceremonies for bringing the mask and the body of the Barong together and, finally, the complete Barong becomes *Banaspati Raja*—the king of the forest.

"Barong Ket, like the servant/clown in Balinese and Javanese theatre, is composed of a weird assemblage of different parts, from varied origins. Being inherently ambiguous, he unites within his form various meanings. While male, he has female features, as evidenced by his beard made from the hair of a pre-menstruating girl. Created by humans, he is a vehicle of the supreme gods." (Hobart 2003: 149)

The ornamentation on the Barong Ket is extremely elaborate with enormous gilded leather "crowns" decorated with tiny mirrors and polished stones that catch the light which surmount the front and rear of the costume. The other commonly seen varieties of Barong, Barong Macan (tiger) and Barong Bangkal

(wild boar), do not include this ornamentation but have more 'realistic' elements that might include a striped or leopard-patterned cloth for Barong Macan or a strip of goatskin along the back for Barong Bangkal.

While not quite as elaborate as the process for making Barong mask, the making of a *Shi-Shi*, especially for ritual use, still involves a good deal of ritual and, most importantly, a spiritual sensibility that takes account of the divine *kami* nature in all things. (Roberts 2013)

## The Dance

The folklorist A. W. Sadler gave an excellent account of a *dai-dai kagura* he attended in Tokyo in 1970:

"The movements of those lions is something unearthly, and supra-human. I mean: the line between representation and holy presence is blurred. . . It is as the head priest of one shrine told me: 'You mustn't worry too much about the origins and locales of the different schools of kagura. You must try to get the spirit of the dance. Kagura is one of the ways of giving pleasure to the kami at o-matsuri time; so origins do not matter, only the spirit. The spirit is essential. The atmosphere of the festival. You've got to feel it.'" (quoted in Kárpáthy 2000: 114)

There is certainly choreography involved in the dances of both Barong and Shi-Shi, including a distinct movement vocabulary that must be inculcated into the body through kinaesthetic learning, which means a great deal of repetition. Yet, in performance there is clearly an element of improvisation in which the creature might interact with audience, other actors and even musicians. It is essential that the dancers have a detailed and secure knowledge of both the choreography and the musical accompaniment, so that the interaction of movement and music can be seamless and intuitive.



Another essential element is that the dancer in the front, who manipulates the mask, is able to ‘see’ through the eyes of the mask in order to make it expressive. This requires a powerful and deeply intuitive relationship with the mask itself and a total subjugation of the dancer’s ‘self’ to the mask. Of course, the eyes are sculpted and not actually ‘open’ in a way that allows them to be seen through and, in fact, the dancer usually can see very little, while the dancer in the rear can see even less. Nonetheless, the two dancers together must seem to make the whole heavy, often ungainly costume and mask function as a single, expressive unit. They must make this sacred creature live. The successful performance of these dances requires physical strength, athletic skill, keen sensitivity of expression and perfect teamwork—all in service to the mask and the spirit that inhabits it. Is it any wonder that these two traditions are also associated with visitation, possession and trance?

## Conclusion

Barong and Shi-Shi are so much alike in form and function and in other, more complex ways one feels they must be brothers, somehow. However, it is unlikely that the Hindu-Buddhist kings of maritime

Southeast Asia visited Japan, and improbable that monks from Japan strayed as far as Bali, though it is theoretically possible that they might have travelled to study at the great Buddhist schools associated with Borobudur in Java. There is no real evidence for actual contact between the Japanese Shi-Shi and the Balinese Barong before the twentieth century. Nonetheless these two great, supernaturally powerful mask performances can claim kinship of a sort: through their associations with esoteric Buddhism and the bodhisattva Manjusri. They are also linked by their iconography, their spiritual power to protect and purify and that they dance as deities. There is too much in common to be mere coincidence.

## Footnotes

- 1) Coldiron, Margaret (2005) “Lions Witches and Happy Old Men: Some Parallels between Balinese and Japanese Ritual Masks” in *Asian Theatre Journal*, Vol. 22, No. 2, pp. 227-248.
- 2) Sakurai (1988) makes a distinction between ‘imported’ and ‘indigenous’ Shi-Shi dances but goes on to point out that “these two types of *shi-shi mai* have influenced each other and it is now difficult to make clear distinctions between them.” (p. 138)
- 3) However, a quick survey of YouTube clips shows that in folk performances today other colours may be used including brown, green and white.



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# ジャワのバティックから インドネシアのバティックへ

——服飾文化から見た「<sup>ビンネカ・トゥンガル・イカ</sup>多様性のなかの統一」の試み

Many multiracial countries agonize over how to unify their citizens. However, Indonesia has solved this issue through the use of dyed textiles called batik.

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## はじめに

最初に、インドネシアの民族服飾文化と国民文化との関係について論じる前提として、世界最大の多民族国家であるインドネシアが抱えてきた国民国家形成の本質的な問題について概観しておきたい。

第二次世界大戦後、アジア・アフリカのほとんどの諸国家は、民族自立という近代的原理に基づいた民族独立運動の結果として、植民地からの独立を達成した。しかし、これらの国家ではいざ独立してみると、その民族は実態として必ずしも統一されていなかったし、またひとつの国民としての一体性に基礎づけられてもいなかった。そのため、これらの諸国家の大半が独立達成後最初に直面した最大の政治課題は、分裂状態にあった多様な民族を調和させ、ひとつの国民を創出することによって、近代的な「国民国家」を形成するというネーション・ビルディング (Nation-Building) の問題であった。しかも、その統合は急速に達成されるのであれば、異なった宗教や文化の価値原理に基づいた諸民族間の対立・抗争によって、いつ国家の分裂を招くかわ

からないという危険性を内在していた。

このような状況が生み出された主要な理由として次の2点を指摘することができる。その第一は、それぞれの植民地領域が帝国主義諸国家相互の政治的・軍事的力関係によって、その地域の民族的・文化的同一性や歴史体験の共同性といったこととは無関係に決定されたことにある。第二は、数百年に及ぶ過酷な植民地支配の下に置かれたこれらの諸国家では、その歴史形成のなかで内発的・自立的な力を奪われてしまい、社会的・文化的・民族的統合への自然な発展を著しく妨げられたことである。

しかし、アジア・アフリカにおける諸国家の独立を西欧近代の必然的拡大と見做した当時の政治理論（西欧化理論）は、このような状況に対する理解が十分ではなかったため、これらの諸国における「国民国家」の形成についてあまりにも楽観的でありすぎた。その結果、西欧近代で特有に発達した政党制や議会制などの民主主義諸制度導入は、これらの諸国家においては人々を国家に結びつける方向（国民統合）ではなく、むしろ地方的・民族的なアイデンティティ（帰属意識）を強化させ、国家を分裂させ



1994年、インドネシアのボゴールで開催されたAPEC首脳会議の最終日、各国首脳全員が王宮の伝統柄のバティックのシャツを着用して登場し、世界の注目を集めた。

る方向でしか機能しなかったのである。

1950年代、インドネシアにおける西欧型憲法体制が崩壊するに至ったのは、その典型的な事例であった。初代大統領スカルノは、多民族国家インドネシアにおける国民統合の困難さを当初から見抜いていた。彼はインドネシア共和国が国民統合を達成するためには、インドネシアの伝統的価値原理（ゴトン・ロヨナー相互扶助、ムシャワラー協議、ムファカトゥー全員一致）の上に立脚したものでなければならないとして、多数決という数の力で全てが決定される西欧型民主主義（1950年暫定憲法）を強く批判した。そして彼はそれぞれの伝統的共同体社会の下で分裂状態にあった諸民族を、インドネシア共和国という新しい運命共同体に結集させることを最大の政治課題として、強力な大統領権限を規定した1945年憲法を復活させた。

「ビンネカ・トゥングガル・イカ（Bhinneka Tunggal Ika—多様性のなかの統一）」は、まさにこのようなスカルノの思想を集約した国家理念であった。彼はこの理念の下に、強力な政治指導力を発揮して地方的な存在でしかなかった多様な民族文化をナショナリズムの枠組みのなかに再編成しようとしたのである。スカルノはその代表的具体例として、ジャワの

民族服飾としてのバティックに注目し、それを国民文化にまで高めようと試みた。問題は、どのようにすれば、民族ごとに分裂している多様な文化に調和を与え、ある特定の民族の伝統文化をインドネシア人全体が共有できる国民文化へと発展させることができるのか、そのための具体的方策とは何かということにある。

その意味で、第二回アジア未来会議が総合テーマとして掲げた「多様性と調和」は、まさにインドネシアが独立以来追求し続けてきた国家理念そのものである。このテーマに込められた問題意識を前提として、ジャワの服飾文化であったバティックがどのようにしてインドネシアの国民文化へと発展を遂げてきたのかという点を中心に、多民族国家における国民文化形成の課題について考察を行いたい。

## 1. 民族文化の多様性とその服飾文化

### (1) インドネシアにおける民族文化の多様性の要因とその問題点

インドネシア共和国は、旧オランダ領東インドを基盤に1945年8月17日、日本の敗戦と共に独立の産声を上げた。国土は赤道をはさんで南北1880km、東西5100kmにわたって散在する大小1万7000以上もの島々からなる世界最大の島嶼国家である。人口は現在約2億5000万人で世界第4位の人口大国である。そしてその人口の半分以上は、全面積の1割にも満たないジャワ島に集中している。住民の多数はマレー系であるが、各島々には300以上といわれる民族が存在している。主要な民族としては、アチェ、バタック、ミナンカバウ、ランポン、スンダ、ジャワ、マドゥラ、ダヤク、マカッサル、ブギス、トラジャ、メナド、バリ、ササク、スンバワ、フローレス、スンバ、チモール、パプアなどがあげられる。これらの民族は数千年にわたる長い共同体社会の歴史のなかで固有の文化を育んできたため、それぞれの地域で異なった言語、慣

習法 (Adat)、社会構造をもっており、その性格も多様である。このような土着文化は、現在でもジャワを始めとするインドネシアの全ての地域に色濃く残っており、インドネシア社会において欠くことのできない重要な構成要素となっている。とくにそれは、各地域の村の伝統儀礼、あるいは伝統的工芸や芸能のなかに今なお生彩を放っている。(地図 1)

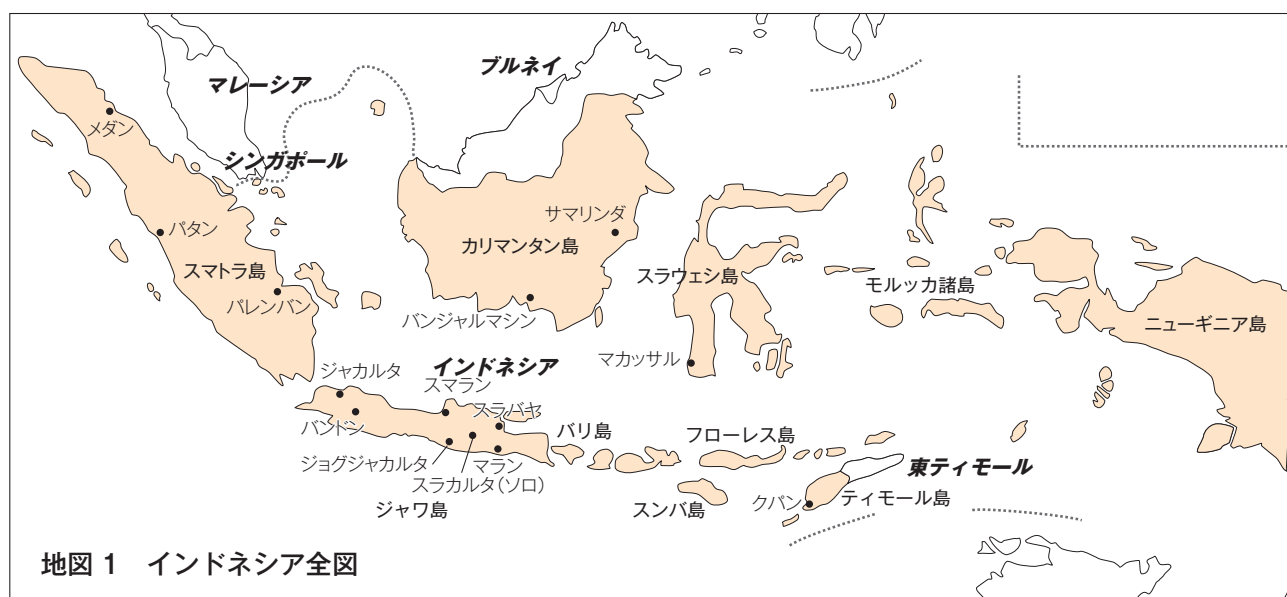
しかし、インドネシアの文化的多様性は、以上のような民族的多様性のみに起因しているわけではない。インドネシア各地においては、その歴史形成のなかで、ヒンドゥ文化、仏教文化、イスラム文化、西欧文化 (キリスト教文化) といった外来文化がつぎつぎと到来し、それらは土着の基層文化の上に様々な形で重層的に受容されたため、各々の地域ではさらに複雑で多様な文化変容を遂げることとなった。とりわけ、オランダの植民地支配は「分割統治」の原則を採用して、地域ごとに異なるアダット (Adat—慣習法) を保護・温存することによって民族間相互の対立をあおり、統一言語の発達を妨げたため、その傾向を一層強めることとなった。また、インドネシアの歴史全般に中国文化からの影響も少なくない上、商業活動に大きな実権をもっている華

人 (中国人・総人口の約 3.5%) の存在も無視できない。その上、短期間ではあったが、強烈な日本軍政時代をも経験する。

以上のように、インドネシアの民族文化は驚くほどの多様性と複雑さをその内に秘めている。そのため、独立後のインドネシアは民族の多様性を原因とする深刻な対立と分裂に直面してきた。とりわけ人口で圧倒的多数を占めヒンドゥ色が強く残るジャワ世界と、面積の広さや天然資源の豊かさに圧倒的であるイスラムやキリスト教色の強い外島 (ジャワ島以外の島々) との古くからの政治的・文化的対立は今日でも主要な政治問題となっている。

## (2) 民族服飾の性格

インドネシアの民族的・文化的多様性は、当然そのままその服飾文化にも反映している。前述した主要民族のみならず、それ以外の多くの少数民族もその風土と歴史のなかでそれぞれが独自の民族服飾を発展させてきた。そのため、インドネシアは「民族服飾の生きた博物館」であると形容できるほど、その素材、染織技法、色彩、文様、服飾形態は多種多様である。



地図 1 インドネシア全図



民族服が民族共同体の文化の反映であるとするれば、それは、誰が、いつ、どこで、どの様な種類の衣装を着用すべきかといった、その民族共同体の慣習（Adat）及び信仰などに関連した社会規範と密接に関係づけられてきた。民族服は、第一に王侯貴族と庶民という身分制と結びついてきた。第二に、それは、誕生、割礼、成人、婚約、結婚、妊娠、死といった人生上の慶弔の儀礼と結びついていた。第三としてあげられるのは、農村共同体の伝統儀礼との結びつきである。第四としてそれは、祖先崇拜や自然崇拜といった古代からのアニミズム信仰の儀礼とも密接に結びついていた。今なお地方では、ある特定の服飾やその文様は悪霊を祓<sup>はら</sup>ったり、病気を回復させたりといった着用者を守護する呪術的な力があると信じられている。したがって、このような文化的基盤の上に成立した民族服は、たんなる個人の好みによる衣服というよりは、ある特定の民族共同体の秩序体系とその精神を直接に反映する象徴的存在として、各儀礼において欠かすことのできない重要な構成要素となってきた。

その結果、民族服は民族を代表する文化として、必然的に着用者の心理に対して、その民族共同体への帰属意識や心理的一体感を高めるというアイデンティティ機能をもつ。他方でそれは自民族以外の民族やその文化に対してそれを拒否するという着用者の心理的傾向をもたらすことになる。多様な民族服の存在は、それだけインドネシアの国民統合の困難さを示している。

なお、ここで現代インドネシアを代表する服飾として幅広く着用されるようになっている「バティック・クバヤ」について簡単に説明を加える。この服飾は元来ジャワ島を中心に発達してきたものであるが、その特徴はカイン・パンジャン（長い布の意味）と呼ばれるバティック（ロウケツ染）の布を巻きつけた腰衣とクバヤと呼ばれる長袖のブラウスが上着として着用されることにある。また男性はバティック布によるシャツを着用するのが一般的である。その詳しい内容については次章以降で考察する。（図2）

図 1



図 2



図 1. ジョグジャカルタ王宮における男子の正装である。

図 2. 庶民の女性の正装で、バティック・クバヤと呼ばれる。クバヤは上着で刺繍が施される。

### (3) 外島における民族服飾の特徴

ジャワ島とそれ以外の島々の総称である「外島」との間に見られる文化的相違は、当然服飾文化の上にも反映している。それは服飾の素材、染織技法、文様、色彩、服飾の形態等において一見すればすぐにそれと分かるほど対照的である。ジャワの服飾がバティックと呼ばれるロウ緞染による布を中心に構成されるのに対して、外島における多様な民族の服飾は主として織による布によって構成されてきた。織布の種類は、その織の技法によって、イカット（<sup>かすりおり</sup>Ikat—絛織）、ソンケット（Songket—縫取織）、浮織、縞織、紋織など多様である。民族によってはそれらの技法が一枚の布のなかに合わせて織られることも多い上、なかには刺繍も施されるため、織布はさらに多様な種類に分けられる。糸の素材としては綿、絹、麻、パイナップル、バナナその他、水草の茎も利用されてきた。金糸、銀糸についてもソンケット、タピス、リマールと呼ばれる織布などに幅広く使用されてきた。またタパ（Tapa）と呼ばれるもつ



とも古い衣料である樹皮布も今なお制作している地域がある。

織によって表現された文様と模様は民族によって様々であるが、自然崇拜や祖霊崇拜を基本としたアニミズム的性格を反映するものが多い。その代表的なものはイカット (Ikat) と呼ばれる絛織で、それには経<sup>たて</sup>絛、緯<sup>よこ</sup>絛、経緯<sup>たてよこ</sup>絛がある。とくに綿による経絛 (イカット) はパプア州 (ニューギニア島西部) 以外の外島の各地で幅広く見られる。とりわけ、スマトラ島のバタック地方、カリマンタン島内陸部、スラウェシ島のトラジャ地方、フローレス島、スンバ島、チモール島、アロール島、ロティ島、サウ島などキリスト教色の強い地域に住む民族の文様においては、戦いで獲得した敵の首を木にさらした首架模様をはじめとして、蛇、ワニ、トカゲ、亀、ニワトリ、馬、牛、鹿、といった動物文や<sup>ひとがた</sup>人像文など、土着のアニミズム文化の色彩を強く反映している。(図3～7)

これらの文様を表現したイカットはイスラム教が偶像崇拜を禁止しているため、90%がイスラム教徒であるインドネシアでは全国的に流通するには大きな制約が認められる。それ以外の文様や模様を表現したイカットとしては、各民族の基層文化とインド、イスラム、中国、西洋からの外来文化との融合あるいはその影響によると思われるものが広汎に見られる。とくに、インドのグジャラート州で制作された<sup>たてよこ</sup>経緯絛の絹布であるパトラ (Patola) の模様は、外島における貴族用として各民族のイカットの文様と融合している。(図5)

このように多様な織物が外島の少数民族の長い歴史のなかで衰退することなく継承され、発展を遂げてきたのはどのような理由によるのであろうか。その最大の理由は、民族服飾が各民族のアイデンティティ形成にとって大変に重要な役割を果たしてきたことにある。1970年代の後半から80年代にかけて、スマトラ島、カリマンタン島、フローレス島、スラウェシ島、スンバ島、チモール島、ロティ島等、私が外島を訪問したその村々では、高床式の家

屋の軒下で女性たちが素朴な腰機で織りをする姿がごく普通に見ることができた。それは、各家庭で自足用、儀礼用として、何世代にもわたって脈々と母から娘へ、民族服飾の制作技術が受け継がれてきた姿であった。しかし、近年の大きな社会変化のなかで、今ではその技術の継承は困難となっている。このことは裏を返せば、各民族のアイデンティティが危機を迎えている姿とも考えられる。

このような状況の進展に対し政府は、諸民族の伝統文化を、国民国家を前提に、それを支える国民文化の基盤としての地方文化へと転換を促そうという政策を近年強く推進するようになってきている。民族アイデンティティから国民アイデンティティへの転換が図られているのである。後に詳しく述べるジャワのバティックに対する「国民文化」化政策の推進と同様に、外島の民族服飾についても、国民アイデンティティへの転換が図られているのである。民族世界のなかで独自に発達を遂げてきた外島の民族服飾は、今では大消費地であるジャカルタやスラバヤといった各都市の巨大なショッピングモールや大きなイベント会場で開催される「伝統工芸博覧会」にインドネシアの誇る「地方工芸品」として出品され、各地方、各民族間でその出来ばえを競い合っている。社会の近代化による外島内部における民族文化の弱体化が進む中で、消費文明の発達が伝統的な外島の織物にその活性化の可能性の道を開き始めている。それはビンネカ・トゥンガル・イカ (Bhinneka Tunggal Ika—多様性のなかの統一) という国家理念に基づいた、ナショナリズム政策による「民族文化の地方文化」化現象として捉えることが可能である。

なお、先に述べた外島のイカット (Ikat- 現在では絛、絛織物の世界共通語となっているが、元来インドネシア語で括<sup>くく</sup>る、結ぶ、を意味する用語) は、その技術の歴史の古さ、民族的・文化的背景の多様性、その種類の豊かさ等、どれをとっても世界的な文化遺産と呼ぶに<sup>ふさわ</sup>相応しい。もしイカットがバティックと同様に世界無形文化遺産に認定され



図3

図3. フローレス島のイカットで、「BINEKA TUNGGAL IKA」という文字が織られている。



図4

図4. スンバ島のイカットで、世界的に有名な「首架文様」のモチーフである。



図5

図5. このロティ島のイカットはインドのパトラ文様を中心である。

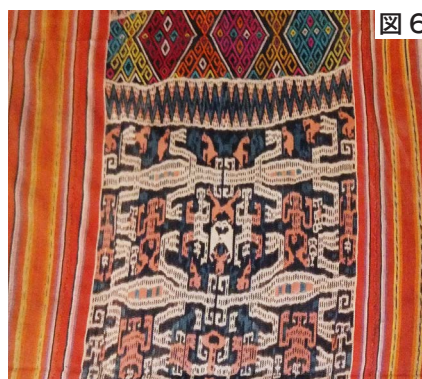


図6

図6. チモール島のイカットには、トカゲの文様が多い。

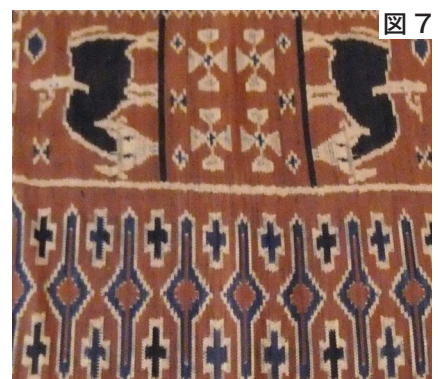


図7

図7. スラウェシ島のイカットでは、水牛のモチーフが多い。

ば、驚く程広大な海域に散在する数多くの島々の何百という民族にとって、彼らの伝統織物に対する新しい価値の再発見とそのアイデンティティは大きな高まりを見せると思われる。「ビンネカ・トゥンガル・イカ」の国家理念とその精神の具体化のためにも、その実現を大いに期待したい。

## 2. ジャワ島内陸部におけるヒンドゥ・ジャワ文化と王宮バティック

### (1) ヒンドゥ・ジャワ王国の歴史的概要

紀元1世紀から3世紀にかけて、ジャワやスマトラを中心に、インドから宗教（ヒンドゥ教・仏教）、言語（サンスクリット語）、文学、美術、建築、統治制度などがもたらされた。7世紀後半にはスマトラのパレンバンを中心に仏教国スリヴィジャヤ（Srivijaya）王国が誕生し、その支配権はマレー

半島やジャワにも及んだ。一方、ジャワでは、8世紀半ばにジャワ島中部でマタラム（Mataram）王国が誕生し、プランバナンを始めとするヒンドゥ寺院群を建設した。また、スリヴィジャヤの影響下で同じくジャワ島中部ではサイレンドラ（Sailendra）王朝が成立し、世界最大の仏教遺跡として有名なチャンディ・ボロブドゥールが建てられた。その後、ジャワではマジャパヒト（Majapahit）王国（1293－1520年頃）が全盛期を迎えるまで、ヒンドゥ王国の伝統が続いた。

このような長い歴史過程のなかで、外来文化としてのインド文化はジャワ土着の伝統文化と混交して変容し、ヒンドゥ・ジャワ文化といわれる今日の共和国の基盤となる文化が成立するのである。ヒンドゥ・ジャワ文化はクラトン（Kraton－王宮）を宇宙の中心とするジャワ独自の価値体系を基礎としていた。そこでは、王宮の権威は、軍事的・政治的活動によって維持されるというよりは、王宮が文化



と芸術の中心であるという点に由来した。その結果、ジャワ独特の王宮文化が多様な発展を遂げていくのである。

15世紀から16世紀になると、インドやアラブの商人を通じてイスラム化の波が押し寄せてくるようになり、マジヤパヒト王国は次第に衰退し始める。ジャワのイスラム勢力は、16世紀前半にはドゥマック (Demak) 王国がジャワの覇権を握り、それが西ジャワのバンテン (Banten) 王国に受け継がれるのであるが、1575年、遂にジャワの内陸部に達して、ジョグジャカルタ郊外のコタグデの地にイスラム・マタラム王国を建てるに至る。ここにジャワはイスラム王国の時代を迎える。

しかし、ジャワにもたらされたイスラムはペルシャやインドで体系化されたスーフィズム (イスラム神秘主義) であったため、それ以前のヒンドゥ・ジャワ文化の理念とも容易に結びつく形で、いわば重層的に受けとめられた。そのため、ジャワの伝統的な文化はイスラムの影響によって衰退するどころか、過去との強い絆を維持したまま、より一層多様な展開を遂げていくのである。たとえば、ワヤン・クリット (Wayang Kulit - 影絵芝居) は、ジャワ古来の祖霊崇拜と、「マハーバーラタ」や「ラーマヤナ」といったインドの叙事詩とが結びついて物語が成立していたのであるが、それにイスラム神秘主義の理念が混入することで、その内容は大きく変容を遂げていく。また、バティック、彫刻、銀細工といった伝統工芸も、同じようにイスラムからの新しい影響を受けながらも、基本的にはヒンドゥ・ジャワ文化によるモチーフをそのまま保持しつづけた。

18世紀半ばになると、強大な勢力を誇ったイスラム・マタラム王国は、オランダの武力の下で「ギャンティの和議」(1755年)によって王家が分割 (ジョグジャカルタのスルタン家とスラカルタのスプナン家) され、1757年にはスラカルタの王家はさらに分割 (マンクヌガラン家) される。また、1817年にはジョグジャカルタの王家も分割 (パクアラマン家) させられた。

オランダにより武力と政治権力を奪われた四つの王家は、互いに文化の面で競い合い、古くからのジャワ伝統文化の復興を積極的に行うことによって、王権の正当性と権威の維持を図ろうとした。その結果、王宮間で文化の様式の微妙な差異を競いあうという状況が生じ、それぞれの王家で独自の異なった文化様式を生み出していくこととなる。バティックはその典型的な例である。

## (2) 王宮 (クラトン—Kraton) の文化とそのバティックの特徴

ジャワの王宮文化をもっとも特徴づけているものとして、プリヤイ (Priayi) と呼ばれる王族・貴族階級特有の価値観をあげることができる。プリヤイは一般庶民と異なって、外面的で物質的な欲望よりも、精神的な高貴さといった内面的な価値の追求を人生の最大の目的とする。そのためプリヤイは、現世の多義性を神秘的に理解するための精神的訓練として、絶対的な自己抑制を試みる。このような努力によって、はじめて「アルース (Alus)」という重要な概念と結びついた高貴な態度が生み出されるのである。この「アルース」という概念は王宮文化を支える最も重要な価値観である。アメリカの文化人類学者、クリフォード・ギアツによれば「アルース」の内容は、一般に「上品」という概念に含まれる全てのものを意味している。たとえば、「純粹・洗練・高雅・丁重・精巧・靈妙・微妙・開明・平穩・調和」といったものが全て含まれている。そのため、王宮の芸術としての「アルース」芸術は長い歴史のなかでプリヤイによるこのような精神的訓練の結果として徐々に発展を遂げてきたのである。バティックは「アルース」芸術の代表的存在であった。

それに対して、アルースの反対概念である「カサル (Kasar)」は、プリヤイ文化のなかではもっとも非難されるべきである。とくに自己の欲望のため感情的になって人間関係の調和を乱したり、利己的で、世話になった人を裏切るような人物はそれに該当する。また、制作の技術レベルが低い村のバ



図 8



図 9



図 10

図 8. 王宮バティックを代表するバラン・ルサック文様のバティックである。

図 9. ソロのスフナン王家のバク・ブヴォノ12世であるが、図 8と同じバティックを着用されている。

図 10. 王宮バティックを代表する神秘主義モチーフであり、ヒンドゥ教の霊鳥ガルーダの羽が描かれている。

図 11. スフナン王家を代表するバラン文様である。

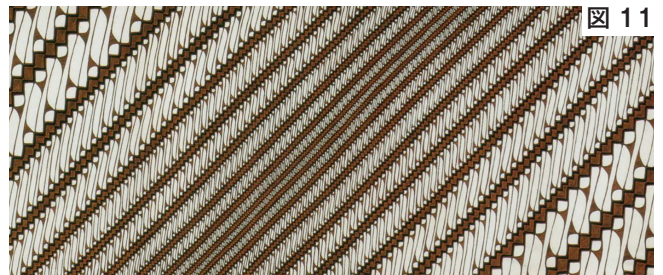


図 11

ティック等は「カサル」であると評価された。

王宮文化を支える重要なアールス芸術であったバティックは、古代ヒンドゥ・ジャワ王国の王宮（クラトン—Kraton）内で、王侯貴族（プリヤイ）の子女のみに許された高級技芸として、特別の保護の下におかれるようになる。それは、バティックの文様と模様を創作し、描き、染色するという数ヶ月もの制作過程がアールスな価値を生み出すための「偉大なる内心の集中」による精神的訓練と考えられたためである。そのため、ヒンドゥ・ジャワ文化の価値観の表現であるバティックの制作は、洗練された高い教養をもったプリヤイ階級に属する子女のみに可能な仕事であった。その結果、バティック制作の技術は次第に精巧なものとなり、そのデザインも芸術的なものにまで高められていったのである。このようにして、バティックのヒンドゥの文様は、ジャワにおける神秘主義的な意味が付与されると共に、新たに創作されたジャワの文様と融合していくのである。したがって、王宮のバティックの文様に見ら

れるヒンドゥ・ジャワ的価値観の反映という基本的な性格は、ジャワの古代王国がイスラム化されるより、かなり早い段階で完成していたものと思われる。バティックはまさに、ヒンドゥ・ジャワ王国の文化的中心としての王宮（クラトン）の権威のシンボルであった。（図 8～11）

### (3) 庶民によるバティック制作と禁制文様の制定

しかし、プリヤイ階級という身分制と強く結びついて発達してきたバティックは、17世紀以降になると、一般庶民の間でも次第に制作されるようになる。とくにインドから大量の綿布が、チモール（Timor）島やスマトラ島のパレンバン（Palembang）からは蜜蠟<sup>みつろう</sup>が多量に輸入されて、バティックの原材料の価格を引き下げた。その結果、王宮の独占的工芸品で、その権威のシンボルであったバティックは一般庶民の間で幅広く制作されるようになる。さらに、バティックの一般庶民への普及を決定づけたのは、17世紀初頭に発見された茶色



のソガ (Soga) 染料によってである。その独特の茶色は、それまでの藍と白を中心とするバティックの色彩に大きな変化をもたらし、さらに、内陸部のバティックの中心地であったスラカルタ (ソロ) やジョグジャカルタの王宮バティックに重要な影響を与えることとなった。

王宮文様のバティックが一般庶民の間で幅広く制作されるようになると、王宮はその権威を守るため、王宮専用の文様を制定し、一般庶民に対してはそれを「禁制文様」として着用することを禁じた。王宮による禁制文様の制定という事実は、18世紀後半において王宮で創作された文様のバティックが一般庶民の間に広く普及していたことを示すとともに、その内容においても王侯・貴族階級と一般庶民との間に大きな接近がみられたことを意味した。言い換えれば、王族がその輝かしい権威を維持するためには、もはやバティックそのものでは不可能となったのであり、そのため王侯・貴族階級であることを示すシンボルとして、特別の意味をもった文様を独占するという方法によって伝統的な身分制の維持を図ったのである。

一方、王宮で生まれた禁制文様以外の多くの文様は、ジャワ各地の一般庶民に幅広く受容されていった。その結果、バティックの文様それ自体がもつ特別な意味は、それぞれの地域共同体の社会規範である慣習法的枠組みと密接に結びつけられていくようになる。共同体によって異なったバティックの象徴的な文様の鎖は、様々な共同体の儀礼と関係づけられるとともに、誕生、成人、婚約、結婚、妊娠、病気、死といった庶民の全人生とも深く結びついていくのである。

このことは、王侯貴族の権威のシンボルであったバティックが、共同体社会の文化的シンボルへとその役割を拡大したことを意味した。それは、プリアイ哲学を表現した王宮芸術としてのワヤン (影絵芝居) が、村落共同体での庶民の生活の重要な構成要素となっていくのと似ている。バティックは、それぞれの地域共同体社会の慣習法的枠組のなかに秩序

づけられるとともに、共同体の構成者である一般庶民に愛され着用されることによって、地域共同体の文化的シンボルとして、多様な変容を遂げていくのである。たとえばバニユマス (Banyumas)、ウォノギリ (Wonogiri)、パチタン (Pacitan) など南部地方に数多くある個性的なバティック・センター (その地方特有の価値観を反映したバティック制作の中心地) は、まさにこのような意味で理解することができる。また、その影響は本来ジャワ文化圏外にあったスンダ地方のチアミス (Ciamis)、タシクマラヤ (Tasikmalaya)、ガルート (Garut) にまで及んだ。

### 3. ジャワ島北部海岸地方の文化とそのバティックの特徴

#### (1) 国際貿易都市と多様なバティック・センターの形成

ジャワ島はヒンドゥ・ジャワ神秘主義の伝統の強い山に囲まれた内陸部 (ジョグジャカルタ、スラカルタ) と、海のシルクロードに面して古くから交易の重要な要衝であった国際色豊かな北部海岸地方という、二つの異なった文化世界に大別できる。このことを、ジャワ人は昔から次のように表現した。

Adat datang dari gunung.

慣習は山からやって来る。

Agama datang dari laut.

宗教 (文化) は海からやって来る。

ジャワの北部海岸地方の諸都市は、15世紀から16世紀になると交易を求めてやってくる中国、アラブ、オランダ、ポルトガル、トルコ、ペルシャなどの商人たちを中心に急激な発展が見られるようになる。その結果、これらの諸都市は、国際的貿易を権力の背景として内陸部の諸王国に対抗し、その独立性を強めていく。そのため、北部海岸地方の諸都市は海を媒介とした外国との交易を通して、商品のみならず、外来の言語、宗教、文化が交流するとい

う国際的な性格を帯びた文化伝統が形成されていく。その文化は、内陸部のヒンドゥ・ジャワ王国の厳格な身分制とは対照的に、一種の平等主義と寛容性に特色づけられていた。

チレボン (Cirebon)、トゥガル (Tegal)、プカロンガン (Pekalongan)、スマラン (Semarang)、クドゥス (Kudus)、ジュワナ (Juwana)、ラスム (Lasem)、グルシ (Gresik)、シドアルジョ (Sidoarjo)、モジョクルト (Mojokerto)、あるいはマドゥラ島 (Madura) などの北部海岸の諸都市は、各々がその地方特有の個性的なバティックを制作する中心地 (センター) であり、ヒンドゥ・ジャワ王国の中心地であったスラカルタ (Surakarta—現ソロ) やジョグジャカルタ (Jogjakarta) とは、そのバティックの伝統が明確に異なっていた。とりわけ、これらのバティック・センターはその地理的要因から内陸部のセンターに比べると、はるかに新しい考えを取り入れることに柔軟であった。このように、この地方の各センターでは、外来文化の影響を積極的に受け入れながら、その地域固有の色彩やモチーフによる独自のバティックを生み出していった。

とくに 17 世紀から 18 世紀にかけて、かなりの

華僑勢力がこれらの諸都市に進出するようになったため、この地方におけるバティックの文様や色彩には中国文化の影響が強く見られるようになる。たとえば、ラスムで制作された茜色 (赤) のバティックは若い女性たちに人気を博し、その流行は北部海岸地方の全体に及んだ。

## (2) バティック革命とジャワの一体化

伝統的なバティックの制作技術は、チャンティン (Canting) という筆による手描き (Batik Tulis) を基本としていたため、複雑なプロセス (11 工程) を要し、1 枚のカイン・パンジャン (巻型腰衣) やサルーン (筒型腰衣) を作るのに通常 2～3 ヶ月を要したため、その製品は庶民にとって非常に高価なものであった。そのため、19 世紀の後半でも、日常着としてバティックを着用していたのは、まだ貴族階級と豊かな商人階層の人々のみという状態であった。

20 以上に及ぶジャワのバティック・センターは、前述したように、ヒンドゥ・ジャワのプリヤイ (貴族) 文化を反映した内陸地方と、外来文化の影響の強い企業家精神に富んだ北部海岸地方とに大別する

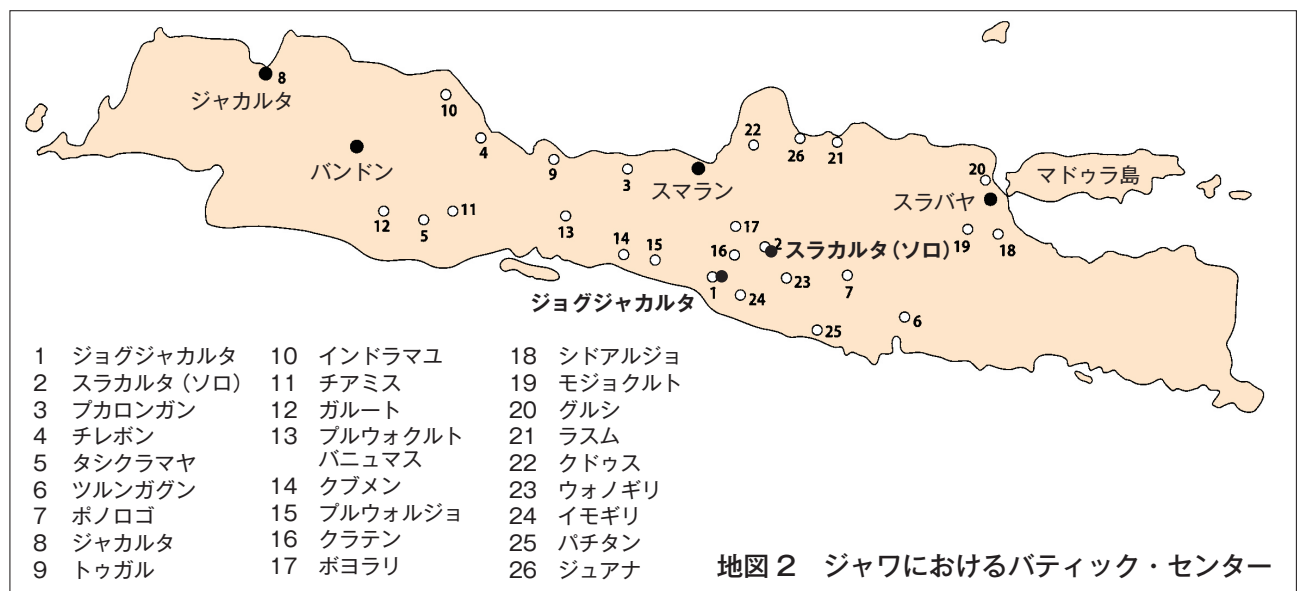






図 12

図 12. イスラム教徒用のアラビア文字によるカリグラフィのバティックである。

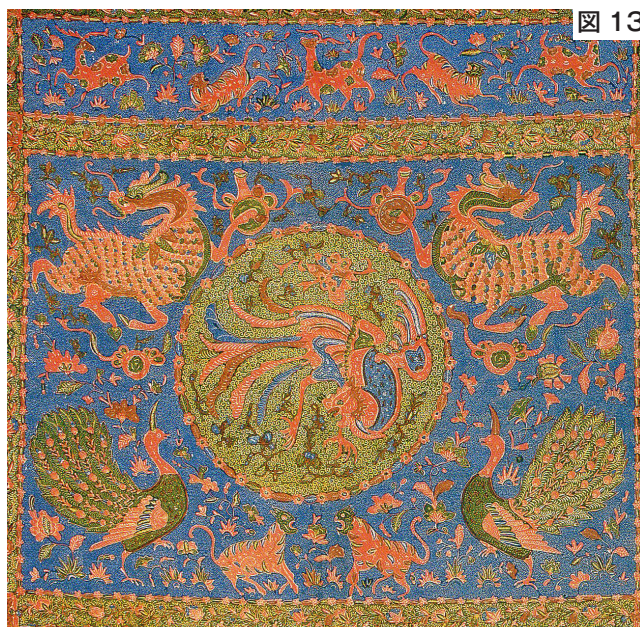


図 13

図 13. 中国系の人々に対する祭壇布として制作されたバティックである。

図 14. 中国の伝統柄である雲文様のモチーフは、ジャワでも豊かさのシンボルとして使用されてきた。

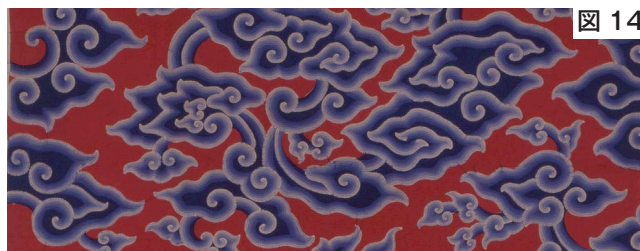


図 14

ことができる。内陸地方の文化は伝統主義的な傾向が強く、反オランダ的で経済的利益の追求を蔑視するのに対して、北部海岸地方の文化は、イスラム的であるとともに西欧的な考え方にも寛容で、経済的利益の追求も尊重した。したがって、19世紀に入って、オランダの植民地支配がより一層資本主義的性格を帯びてくると、そのような社会変化にいち早く対応したのは、北部海岸地方であった。

北部海岸地方のバティック企業家たちは、新しい状況に対応する方法として、バティックの制作について、二つの点で大きな成果をあげた。

第1の方法は、化学染料の導入である。ヨーロッパから輸入されてきた化学染料の使用によって、染料製作の工程を大幅に短縮できた。さらに新しい色彩が導入されたことで、伝統的なバティックが持ち続けてきた共同体の文化的要素をますます薄める結

果となった。

第2の方法は、バティック・チャップ (Cap) の登場で、それはバティックの制作方法のみならず、バティック全体にわたる文化的革命ともなったのである。このチャップは、1850年頃から登場してくるが、それは文様の刻まれた銅製のスタンプで、それまで用いられてきたチャンティン (Canting) という筆でいちいち描いていかなくても押すだけでよい。著しい期間の短縮となり、職人も熟練工でなく単純労働者で十分に勤まることとなった。

このような新しい方式の工場による製作が行われた結果、製作工程の簡易化、製作日数の大幅短縮、職人の大量供給や商品の大量製作が可能となった。そのためバティックの価格は大幅に下がり、ジャワ島全体の需要の拡大と海外への輸出の拡大を一蹴にもたらすこととなった。



化学染料とバティック・チャップの登場による商業化と市場の拡大は、特定の地域的、文化的背景をもった小さなバティック・センター（共同体）の領域を超えて拡大していった。とくに、1870年から1880年にかけて、鉄道と道路が輸入商品の輸送を目的としてジャワの広範な地域に開通するのであるが、これは一方でバティック・チャップを中心とする大量のバティック製品を、急速にジャワ全土に広げていくこととなった。そして、この変化は鉄道や道路のジャワ全土への開通と相俟<sup>あいま</sup>って、長い間、孤立してきたジャワの各共同体社会を相互に結びつけ、ジャワ世界を一体化させるという文化的共通基盤を形成する要因ともなったのである。

内陸部のバティックは、元来その伝統の中で各々の文様にある特別の意味と目的をもって着用されてきた。しかし、ジャワ全体への流通の拡大はバティックの文様の深い意味を理解できない他の地域の消費者によって、単に彼らの美的な基準やその好みだけで着用されることを意味した。このようなジャワ全体への商業化と大衆化の進展は、内陸部のバティックに大きな文化変容をもたらす重要な要因ともなったのである。

### (3) オランダ領東インド帝国の完成とバティックの大衆化

商業化に伴うバティックの変容とその流通空間の拡大は、19世紀から20世紀にかけてのオランダ領東インドという植民地国家の完成と無関係ではない。植民地国家の完成の過程は、ヒンドウ・ジャワ王国の内陸部と北部海岸地方という二つの異なった政治的、文化的世界を解体し、オランダ領東インドという新しい政治空間に再統合するという過程であった。このことは、人々が移動し、交流する空間、あるいはその伝統的な民族文化の流通する空間を、それまでの地域共同体やジャワ島という狭い枠を超えて、オランダ領東インドという新しい政治空間に拡大していくことを意味していた。その結果、20世紀に入ると、バティックはジャワの民族文化

のシンボルとしての枠を超えて、新しい政治空間に拡大する兆候が現れたのである。

19世紀後半から始まったバティック制作の近代化によって導入された化学染料はそれまでになかった豊かな色彩のバティックの制作を可能とするようになった。そのため、プカロンガン、チレボン、ラセム、クドウスなどの、北部海岸地方におけるオランダ人、中国人、アラブ人の経営する規模の大きい工房では新しいモチーフと色彩感覚によるレベルの高いバティックが数多く制作されるようになる。たとえば、オランダ人工房ではヨーロッパへの輸出を目的として、赤頭巾や白雪姫などヨーロッパの童話をモチーフとしたものや、飛行機、汽車、船や兵隊など新しい時代の風物を描いたものなどが制作された。中国人工房では、彼らのノスタルジアから中国の伝統的な風物やデザインをモチーフとしたものが数多く制作された。アラブ人工房では、よりイスラムに適合させるために動物や人<sup>ひと</sup>像文様を排除したモチーフが制作された。しかし、20世紀初頭から何よりも数多く制作されたのは、「花更紗」として知られる美しい花束（ブーケタン）のモチーフであった。このモチーフを最高の技術で表現して有名になったのが、プカロンガンのオランダ人工房ファン・セーレン（E.V. Zuylen）とクドウンウニ（Kedoengwoeni）村の中国人工房のオイ・スー・チョン（Oey Soe Tjoen）である。20世紀に入るとジャワ島以外のスマトラ島のジャンビヤパレンバンあるいはスラウェシ島のマカッサルなど外島のバティック消費地から、その地方特有のモチーフや色による質の高いバティックの注文が北部海岸地方に大量に寄せられるようになった。

1920年代に入ると「トコ・ジュパン」と呼ばれた日本人商店が、そのサービスの良さでジャワの庶民から人気を集め、最盛期には800店ほどに達した。その中には沢部磨瑳男が開いた「トコ・フジ」のように、レベルの高いバティックを制作する店も出現した。この時期には、富士山、芸者、扇子など、日本をイメージしたバティックが数多く制作された。



図 15

図 15. オランダ人のファン・セーレン工房で制作されたブーケタン（花束）文様のバティックは、その技術の高さと美しさで、バティック業界に大きな影響を与えた。



図 16

図 16. スエズ運河が 1869 年に開通すると、次々とヨーロッパから近代化の波が押し寄せたが、その風景を描いたバティックである。

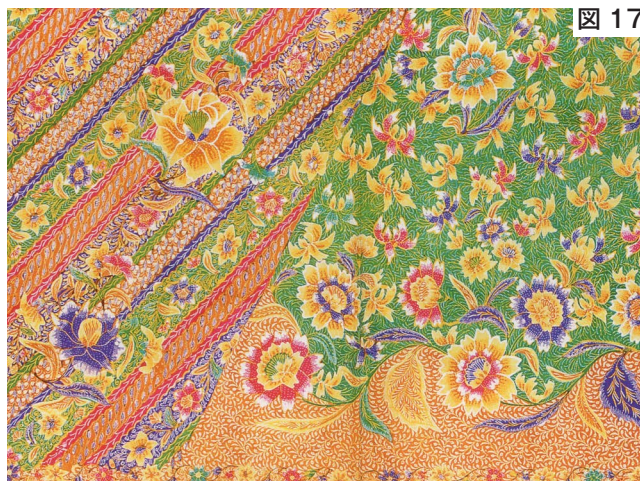


図 17

図 17. 1941 年から始まった日本軍政下で着物柄をモデルとして制作されたバティックは、ホーコーカイ・バティックと呼ばれて、その美しさで人気を集めた。

とくに、1942 年からインドネシアが日本軍政下に置かれた中で制作された「ホーコーカイ・バティック」（「ジャワ奉公会」から名付けられた）はその美しさで注目を集め、現在まで制作され続けてきた。しかし、日本軍政という戦時体制においては、輸出入が一切ストップしたため、バティック業界は大変な苦境に追い込まれたのである。（図 12～17）

一方、日本軍政の下でジャワの各王宮（王侯貴族）も大きな経済苦境に陥り、そのため手持ちの貴重なバティックを庶民の間に売りに出さざるを得ない状況に追い込まれた。王侯・貴族専用の伝統的な禁制文様はジョグジャカルタ王宮のハムンクブオノ 9 世の下で、ここに初めて一般庶民にその着用が許されることになったのである。この決定によっ

て、一般庶民が禁制文様のバティックを着用することが、ジャワ社会全体のブームとなる。また、バティック・チャップによる安い価格のバティックによって、「下層階級の人々が上流階級のスタイルを真似る」ということが幅広く庶民の間で流行するようになる。このことは伝統的な身分制がますます曖昧なものになっていくことを意味すると共に、王宮バティックの文様が保持し続けてきた神秘性や、その哲学的意味の形骸化を押し進めることとなった。

ここに、ジャワの王宮の権威のシンボルとして成立したバティック文化は、一般大衆の文化へと大きな変化を遂げることになったのである。それは、オランダ領東インドという政治空間を基盤として新しく登場してくる主権国家インドネシアの国民という



観念と結びつくための重要な布石となる。

## 4. インドネシア共和国の誕生とバティック・インドネシアの成立

### (1) 初代大統領スカルノの民族文化政策とバティック・インドネシアの創造

スカルノは日本軍政下の 1945 年 6 月 1 日に開催された独立準備委員会で行ったパンチャシラについての演説でつぎのように述べている。「インドネシア民族主義を、第一の原則として採用しようではないか。完全なインドネシア民族主義とは、ジャワの民族主義でもなく、スマトラの民族主義でも、ボルネオ、セレベス、バリその他のいかなる民族主義でもなく、それらのものが一丸となった単一国家の原則となるインドネシア民族主義である」。彼が作り出した政治哲学である「パンチャシラ (Panca Sila—建国五原則)」は、1945 年憲法の前文として採択されるのであるが、この原則はインドネシアの国家理念である「ビンネカ・トゥンガル・イカ (Bhinneka Tunggal Ika—多様性のなかの統一)」というジャワ古来の哲学を基礎としたものであった。それは、インドネシアの各民族が培ってきた多様な伝統的・文化的価値を積極的に肯定することで民族間の調和を図りながら、しかもなおその上に、インドネシア共和国の基盤に立った民族 (国民) を創出しようという意図に根ざしていた。

スカルノは「ビンネカ・トゥンガル・イカ」が単なる御題目 (実質的内容を伴わない<sup>たてまえ</sup>建前や原則の主張) になることをさけるため、その具体化の代表的な事例として、当時すでに外島の一部にまで広がりを見せていたジャワを代表する服飾文化としてのバティックに注目し、強力な指導力によってそれを国家レベルにまで高めようとしたのである。

ナショナリスト・スカルノにとって、民族文化もまたネーション・ビルディングという最大の政治課題に対して、その役割を担うべきであった。これ

が 45 年憲法 32 条に規定された「政府はインドネシアの民族文化の高揚を図る」という短い文章の意味するところであった。そこでスカルノは、ジャワ固有のバティックをインドネシア全体を代表するバティックにするために、ジャワ古代王国の伝統を受け継いだ王宮文化のシンボルである文様と外来文化の影響を受けた北部海岸地方特有の明るい色彩とを融合させることによって、ジャワの伝統的な文化的要素 (ヒンドゥ・ジャワ世界独得の価値観) を極力薄めようと考えたのである。

スカルノの指導の下、ジャワ文化に精通していたハルジョナゴロ (Harjonagoro) によって創作された、この新しい「バティック・インドネシア」は、ジャワ中心主義に反対する外島の民族世界の人々にも次第に受容されるようになっていく。スカルノによるこの「バティック・インドネシア」の創造は、「新しいインドネシア共和国における統一への希望の表現」といえるものであった。これを契機に新しい感覚のバティック・インドネシアがつぎつぎと生み出された。(図 18～20)

スカルノは、「バティック・インドネシア」の創造を成功に導くため、バティック産業を保護し育成するためのナショナリズム政策を強力に押し進めた。そのひとつは、1950 年代に急激に増加していたイミテーション・バティックに対して輸入制限を行うことであった。また、バティック調査センター (Balai Penelitian Batik dan Kerajinan) において、新しい色彩やデザインの研究を進め、各企業に対してその普及活動を始めた。さらには全国の小学校・中学校・高等学校の制服としてバティックのシャツを採用するように指導するとともに、公務員にもバティックの着用を義務づけたのである。このような様々なスカルノの民族服政策は大きな成果をあげ、全国の津々<sup>つ</sup>々々<sup>つ</sup>で開かれる村の小さな儀礼から、ジャカルタでの盛大な国家的儀礼に至るまで、女性はバティック・クバヤ (Batik Kebaya) を、男性はバティックのシャツ (Hem Batik) を積極的に着用するようになり、インドネシアの社会的一体性と



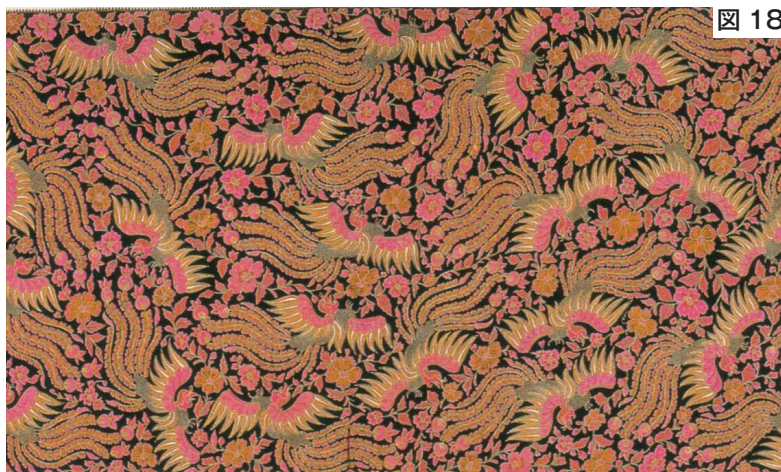


図 18



図 19



図 20

図 18. スカルノの依頼によって制作された「バティック・インドネシア」である。伝統的モチーフと北部海岸の色彩の融合は人々に大きな希望を与えた。

図 19. 図 18 の部分拡大図

図 20. これは日本の着物の帯として、黄金のシルクで制作された現代バティックである。

国民統合の進展を内外に強く印象づけることとなったのである。

「ビンネカ・トゥンガル・イカ」という国家理念の下でスカルノによって展開されてきたバティック政策は、スカルノ以後の各大統領によって現在まで積極的に受け継がれてきた。1995 年、ジョグジャカルタ郊外のバティック・センターであるイモギリ (Imogiri) で調査を行った時、政府がバティック業者に行っていた政策は、「色は変えても良いが伝統色モチーフはそのまま維持せよ」ということであった。スカルノの政策は守り続けられていたのである。今では、大統領を始めとするインドネシアの指導者層も自分の出身民族を超えてバティックの服装を着用することが普通となっている。まさにジャワのバティックはインドネシアのバティックへと変容

を遂げ、インドネシアのナショナル・コスチュームとしての地位を獲得していくことになる。

1994 年 11 月、ボゴールで開催された APEC 首脳会議の最終日、クリントン米国大統領や日本の村山首相を始めとした各国首脳全員が、王宮文様の絹のバティックのシャツを着用して登場し、世界にインドネシアのバティックの存在を改めて強く印象づけた。このことが先例となって、その後の APEC 首脳会議では、開催国の伝統服飾を着用することが恒例となっている。

## (2) 「インドネシアの文化遺産」から 「世界の文化遺産」へ

インドネシアの経済発展は、1990 年代に入ると都市を中心に大きな社会変化をもたらすようにな

り、人々のライフスタイルも急速に現代化するようになる。大都会では高層のビルが林立し、道路は車で溢れている。次々と建設される巨大なショッピングモールは、どこも買物や食事を楽しむ人々で賑わっている。このような消費文明の進展はバティック界にも大きな影響を与えるようになった。

その第一は、新たな絹のバティックの登場である。消費文明の波を受けて、有力なバティック・デザイナーたちが次々と新しい感覚の魅力的な絹のバティックの制作に挑戦し始めたのである。第二は、バティックの流通の拡大が全国規模になるに従って、外島の島々で長い間その民族によって作られてきたイカットなどの伝統的なモチーフをバティックのデザインとして取込むことで、その地方独自のバティックが制作されるようになってきたことである。もし、この動きが外島全体に広がっていけば、「バティック・インドネシア」は民族間に調和をもたらすインドネシアの国民文化としてさらに大きな発展を遂げると共に、その文様の広がりやバティック・インドネシアに新しい革命をもたらす可能性さえある。第三としては、バティックを中心とした伝統工芸の大規模な「博覧会 (Pameran)」が政府主導型で頻繁に開催されるようになってきたことである。そこでは、バティックのファッション・ショーがよく開催されており、どの会場も大変な活気にでぎわっている。

バティック・インドネシアの新たな発展は、インドネシア人による自らの伝統文化の「再発見」と、その芸術美に対する「再創造」の高まりを表している。それはバティックが、まさにインドネシアを代表する重要な「国民的文化遺産 (Warisan Budaya)」であることを人々が強く認識した結果に他ならない。

2009年10月2日、インドネシアのバティックは国連教育科学文化機関 (ユネスコ) によって「世界無形文化遺産」に認定された。服飾としては世界で最初の認定であった。それを記念して開催された「世界バティック・サミット」には私もスピーカー

として参加していたが、会場はインドネシアのバティックが世界から高く評価されたことに対する大きな喜びで大変な熱気に包まれていた。挨拶を行ったユドヨノ大統領は「インドネシアはバティックの国である」と宣言し、この日を「バティックの日」として国民にその着用を義務づけた。それは、「バティック・インドネシア」が世界に誇る「国民文化」であることを政府が公式に認定したことを意味した。

多民族国家において、ある特定の民族の伝統文化が国民統合という政治的役割を担う文化にまで発展を遂げたというのは、世界的に見ても非常に珍しいことである。しかも、国民の大多数が信仰している宗教 (イスラム) とは全く異なったヒンドゥ・ジャワ王国の王宮内でその古典は形成されたのである。

以上考察してきたように「バティック・インドネシア」の成功は、世界最大の多民族国家インドネシアにおける国家理念「多様性のなかの統一 (ビンネカ・トゥンガル・イカ)」の方向性と可能性を見事に示した事例と思われる。

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# Diversity in Harmony

## Multi-ethnic Architectural Conservation in an ex Colonized country

### Semarang, Indonesia case

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植民地時代の名残をとどめる建築遺産を壊すべきではない。その遺構が持つ植民地主義のみを廃して、旧宗主国への「平和の大使」にするのだ。

#### Abstract

Since the proclamation of Indonesian independence on August 17th 1945, this new nation has taken as its motto: *Bhinneka Tunggal Ika*, which means “Plural but One, Unity in Diversity.” This concept infiltrates all aspects of every Indonesian’s life. This concept should infiltrate any Indonesian city as the place where Indonesian peoples’ lives take place. Semarang as an Old Indonesian city has a long history and nowadays it is time for a heritage building conservation movement.

As a city in a formerly colonized country, Semarang faces challenges in doing architectural conservation such as the decline of the Kota-lama as the heritage area with the consequences that many of the heritage buildings are threatened with a construction collapse. In Semarang, the bad impact is being doubled with the rising of the sea level (Rob) that submerges the heritage area in seawater. The next problem is that the heritage building lies in a prospective area where economic runs high. This threatens some heritage buildings that lie there. To get around the laws of conservation, owners of some of those heritage buildings employ “intentionally decaying strategies” to make their own heritage building collapse.

As a formerly colonized city, Semarang grew into a colonial paradigm called “*Divide et impera*.” The city is divided into several zones based on the difference of the ethnicity. The city developed “Pelandan,” “Pecinan,” “Kauman,” “Pekojan” (the Dutch, the Chinese, the Indonesians, the Kojas) districts. Until now, the conservation movement focuses on the Kota-lama—Little Nederland and on Semawis—a community-based conservation effort in a formerly Chinese community area. The city’s residents and the government seem to forget the traditional Javanese area Alun-alun & Kanjengan, Djohar market, Kauman and Pekojan. But recently a positive movement has appeared: some communities have organized themselves and arranges many special and traditional events, for example, at Kampung Bustaman, Warak ngendog festival, Dhug Dher festival and others. By organizing all the capacity of the many layers, many ethnicities of all the city’s residents, we can prove that we can break the divider that built this nation history, and turn it into a fruitful campaign towards a prosperous community, an architectural conservation that embraces all communities and covers all the heritage area, developing an amazing heritage tourism through the old city. This displays the spirit of “Unity in Diversity” towards “Diversity in Harmony,” precisely, as our founding-fathers have planned for us.

**Keywords** Multi ethnics, Semarang city conservation, heroic conservation, conservation in a formerly colonized country

## Introduction

A city is an artifact as a product of the long history of the city. Semarang as an old city had a long history too, and the whole architecture of Semarang and its districts and regions reflects the path of that history. So every part of Semarang city has its own values and share the whole Semarang's history. That is why the paradigm and policy of the Semarang's conservation has to cover all historical district and regions in Semarang. So far nearly everybody and every effort and energy—from the government, the art community, the press, universities, many foundations (many in cooperation with Dutch's foundations)—have been poured in to lift up and promote “Kota-Lama” as an formerly colonial district. While Pecinan's community as the inhabitants of the Chinese district, by their community-based self-supporting effort has successfully arranged the Semawis bazaar on each Friday through Sunday nights.

As history records, the Dutch colonists applied the “*Divide et impera*” colonial politic strategy in separating the many ethnics into each closed districts merely to easily have control on them, so in Semarang emerged the “Pelandan,” “Pecinan,” “Kauman,” “Pekojan, Kanjengan” (the Dutch, the Chinese, the Indonesians, the Kojas) districts. In the 21st century, we need to adopt the paradigm and the policy of our City conservation—that is “the multi-ethnics Semarang's city conservation”—to show the world that after our Independence Day 1945, now we are together and will not be separated again. The heritage with multi-ethnic districts becomes a monument of “Unity with diversity in harmony,” over the Semarang's citizen and need to be conserved for the sake of history and on behalf of the mutual benefit for the Semarang's citizens. For example, the Semarang city with the multi-ethnic conservation area can be a favorite tourism destination with multi-ethnic attractions, culinary, culture, architecture and everyday-life atmosphere, which can generate and improve all every aspects of the life of the city. Starting from this point of view, we can firmly and strongly propose and campaign this “Multi-ethnics Semarang city conservation” as a public awareness movement<sup>1</sup>.

## Problems of Architectural Conservation in a Formerly Colonized Country in Semarang.<sup>2</sup>

Architectural heritage conservation in Semarang, Mid Java, faces many challenges and even threats. There are two kinds of architectural heritage conservation in a town like Semarang. The first is the heritage located in a declined region, a Bronx to be. The second is the heritage located on a very strategic business area. There are two different threats to each of the type of the heritage.

The first one, inherent with the region's problems, is that the “destiny” of the architectural heritage as a member of the declined region really depends on the “destiny” of that region. The decline of an old historic urban ‘Kota-lama’ at Jl. Raden Patah, Semarang, which is popular as ‘The Little Netherland’ is an example of the problem.

The decline of an old historic urban area is a problem often found in many countries. Owners of old buildings are reluctant to maintain their old-historical building because of the decline of the economic, social and even the political roles of that area. In that case, it will be very difficult to restore the declined area to be a bright and promising area again. When people started to abandon that area, the area would become a Bronx-like area. Almost no one will be interested in working, investing or even living in that area. ‘Kota-lama’ at Jl. Raden Patah, Semarang, which is popular as ‘The Little Netherland’ is an example of the problem. Many NGOs in collaboration with the government have made efforts to restore that ‘sleeping’ area, but until now, the result has not been significant.

## Intentionally Decaying Strategy<sup>3</sup>

Another problem is that some old historic urban areas located in old Downtown areas are currently becoming more and more interesting areas for business, capital investments and for living.

Unlike the decline of old historic urban areas, this condition raised many threats to the old historic urban areas as well. The land-value of that historic

and at the same time an actual Downtown is growing higher & higher, so it is understandable that owners of old historic buildings will undoubtedly try to develop the site of the old historic buildings into a more profitable site. The owner arranges ‘tricks’ to remove the old buildings in order to develop the site to an all new great gigantic buildings, with an incredible business prospect. One of the tricks nowadays is what we called “*Pembusukan*” (Indonesian for “spoiling, intentionally decaying strategy”). This means a clandestine effort to despoil protected old buildings until there are nothing left but ruins from the protected old building, so anyone can do anything on that ruins and nothing wrong with that.

This “Intentionally decaying strategy” covers the conflict of interest between the land-value and the historical-value of the building. That conflict triggered a “War” between the building owner with capitalistic interest, based on the profit of the real-property and the public interest of a historical building. That “War” involves many stake-holders, including the investor and the government. In that “War” many strategies were being used, among them, what the writer calls Intentionally Decaying Strategy. By this I mean a strategy planned by the owner of a heritage building to destroy the owner’s (heritage) building on behalf of profit making. So far, many of the architectural heritages in Semarang has suffered Intentionally Decaying Strategy.

The “tug of war” between the capital-owner interest and the public interest in the public space domain—such as the Heritage building usually leaves the public-interest subordinate. Semarang as one of the old-towns in Indonesia suffers the impact of that tug of war too.

### **Architectural Conservation on a Formerly Colonized Country<sup>4</sup>**

Instead of ordinary problems of Architectural Conservation in such countries, in Indonesia, there must be a special approach, attention and attitude on the Architectural Conservation of Colonial-buildings.

That has to be done because colony-building had a traumatic effect on the indigenous people and if treated wrongly it can bring back the feel of anguish in the present time.

Instead of that ordinary problem of architectural conservation there must be a special approach, attention and attitude on the architectural conservation of colonial building. In the first, colonialism makes their people ‘heroes’ as the ‘winner’ of the war on their overseas colonies. That will be an opposite case in a former colony.

Indonesia was colonized for more than 300 years. Colonialism nearly took all of what the colonized people have, agricultural-product: the Hongitochten, the Culturstelsel, many mining products, and workers: Rodi, Jugun Ianfu, liberty and even their dignity. All those have made the colonized people physically and psychologically being hurt. They have felt such a great anguish and a colonial building, if misused, can bring back the feel of anguish in the present time.

A colonial building was the setting and the place where abuse, torture and arrogance of colonialism occurred. A colonial building was consciously and intentionally designed to show the superiority of the colonials to the colonized people. At the time when an indigenous people had to come to a colonial building, they were in a position of a servant, even an accused. So they had to come in a very careful, ‘polite’ and maybe in a frightened way. This had to be taken for granted and there had to be ‘No-Question’ to this ‘Unwritten-law’. This ‘Unwritten-law’ had made a very deep trace or even scar into the feeling of indigenous people. The colonial-building then became a nightmare for nearly all of the ordinary indigenous people until the Freedom-day came and a new hope arise.

After Indonesia’s Independence Day on August 17th, 1945, all the colonial buildings were then occupied by the Indonesian Republic Government and the military had been given the authority to manage them. The military buildings as well as other military properties were managed in a military way. This mil-



itary management reached the strictest holding of the colonial buildings after the new regime, a military regime, took over the rule of the politics in 1965. The colonial buildings then had become more and more alienated from ordinary people. As other military buildings, the colonial buildings were guarded with standby guns, and taking photos of them was prohibited. No one had the permission to even look at the buildings. And so, the Colonial buildings had again become a nightmare for nearly all of the ordinary people for about 32 years.<sup>5</sup> (Fig. 1)

The next problem was the “*Divide et impera*” colonial political strategy in separating the many ethnics into each closed districts merely to easily have control on them. In Semarang emerged the “Pelandan,” “Pecinan,” “Kauman,” Pekojan, Kanjengan” (the Dutch, the Chinese, the Indonesians, the Kojas) districts. Semarang old city as an artifact of the colonial segregated social policy have to be careful and to have a specific treatment to overcome the old traumatic phenomena.

### Unity in diversity in harmony

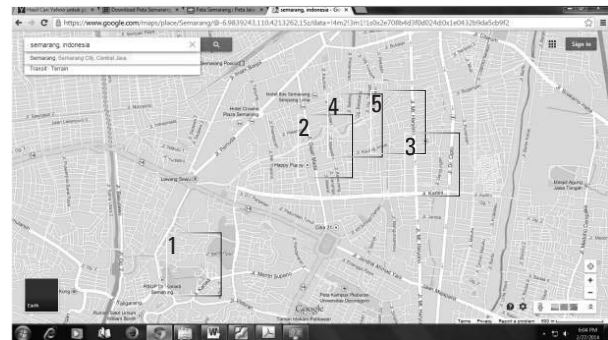
Until now the “*Divide et impera*” policy is still alive there although not so segregated as the colonial era. The indigenous people’s descendant still live there as



**Fig. 1 The Lawang sewu (Thousand doors) building, Kota lama (Semarang Old town)**

the resident with their traditional customs. From the discussion above, we have known the importance of the conservation strategy in Semarang as a city in an ex colonized country, about the holistic multi ethnics’ conservation of Semarang old city. Departure from this point, the “Semarang’s city conservation in the context of tourism and culture should be implemented with the multi-ethnic spirit and nuance in holistic way and not to leave any part of the Old-city behind. The “Kota-lama” sector and the “Semawis” can be the locomotive to draw out all other sectors to go forward together to be a great district of holistic multi-ethnics conservation area.<sup>6</sup> (Fig. 2)

The Kanjengan district<sup>7</sup>, Pasar Djohar and district of Kauman Mosque, Dibya Puri Hotel<sup>8</sup>, cannot be separated and it is associated with the Old City—Little Nederland—with its mBerok Bridge, Tawang Station and its Polder, Kampong Melayu Region and the Chinatown, *nota—bene* possible in a matter of distance. The multi-ethnic spirit and nuance also includes the rules for the future development of the entire region, creating an integrated Old City of Semarang Tourism District, various specific ritual activities as an original Semarang’s culture and tradition can be conserved (nguri-uri). Dug—Deran festival at the beginning of Ramadhan, Warak Ngendog, Barongsay Ritual dances, parade



**Fig 2. Map of Kotalama area and the Old heritage area in Semarang**

Notes: 1. Lawang Sewu, 2. Djohar market, 3. Semawis Nightmarket, 4. Kampong Melayu, 5. Blenduk church

of many kinds of traditional food stalls Semawis are already way ahead, as well as the creation of new agendas Semarang<sup>9</sup>, cultural festivals and arts and last but not least, preparation and design of Semarang home-stay to provide a “Semarang live-in” to give a chance to enjoy the Semarang atmosphere in a holistic way. Instead of economic purposes, all of the agendas also in order to turn on the lives of Semarang’s culture. The effort is designed in order to negate the pejorative brand of Semarang, as a non-fertile town for cultivating art and culture. It is the culmination of Semarang’s actualization to all the residents’ dignity to be a multi-dimension prosperous people. (Fig. 3)



**Fig 3. the Minaret (tower) of Layur mosque, Kampung Melayu**



**Fig. 4 Pasar (market) Djohar as designed by olden Dutch architect, Herman Thomas Karsten**

The heritage with multi ethnics district becomes a monument of unity with diversity in harmony, over the Semarang’s citizen and need to be conserved for the sake of history and on behalf of the mutual benefit for the Semarang’s citizen this time-being. For example, the Semarang city with the multi-ethnics conservation area can be a favorite tourism destination with multi-ethnic attractions, culinary, culture, architecture and everyday-life atmosphere, which can generate and improve all every aspects of the life of the city. Depart from this point of view, we can firmly and strongly propose and campaign this “Multi Ethnics Semarang’s city conservation” as a public awareness and movement. (Fig. 4, 5)



**Fig. 5 The Kampong Bustaman everyday life**

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## Conclusion :

Architectural conservation in a formerly colonized country faces challenges, including the decline of the heritage area with the consequences that many of the heritage buildings are threatened by construction collapse. The next problem is the heritage building that lies on a prospective area where economic runs high. This leads to a threat on some heritage buildings remaining there. To avoid the law of conservation, some owners of heritage buildings carry out “Intentionally decaying strategy” to make their own heritage building collapse.

Semarang grew according to a colonial paradigm, called “*Divide et impera*.” The city is divided into several zones based on the difference of the ethnicity. The heritage conservation movement has arisen but does not cover all the old heritage area of the city. For the sake of the wholeness of the mission of the heritage conservation, more attention should be done to the other area, such as the Kauman, Pekojan, Alun-alun and Djohar as the traditional market. The recent traditional events by the community as a community based movement can be a good start in a fruitful campaign towards a prosperous community, an architectural conservation that embrace all communities and cover all the heritage area, develop an amazing heritage tourism through the old city. It all displays the spirit of “Unity in Diversity,” as Indonesian founding-fathers planned for us.

## Footnotes

- 1) Soesilo, Rudyanto, Multi Ethnic Semarang’s city conservation.
- 2) Soesilo Rudyanto, International Seminar on Environment & Urban Management, PMLP Unika soegijapranata, Semarang, 2006
- 3) Soesilo Rudyanto, “Intentionally Decaying Strategy, a threat to architectural heritage, Semarang case.

- 4) Soesilo Rudyanto, Architectural Conservation on an ex Colonized Country, the Semarang, Indonesia case.
- 5) Architectural Conservation in an ex Colonized Country like Indonesia, have had the First-rule, that it must guarantee that the coming use of the former colonial building will never awakened the trauma and the nightmare to the people—now—in the present time. (Altruism paradigm in Conservation). Soesilo Rudyanto, International Seminar on Environment & Urban Management, PMLP Unika soegijapranata, Semarang, 2006
- 6) Soesilo, Rudyanto, Multi Ethnic Semarang’s city conservation
- 7) Kanjengan district was demolished and turned into a shopping center about 20 years ago and great efforts are needed to return this district to a reconstruction conservation area
- 8) Dinya Puri Hotel, now is under the threat of “Intentionally decaying strategy,” (Soesilo Rudyanto, “Intentionally Decaying Strategy, a threat to architectural heritage, Semarang case. Presented for The third International Conference on Environment and Urban Management, “City marketing, Heritage and Identity,” 24rd–25th August 2007, Soegijapranata Catholic University, Semarang, Indonesia).
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# Teacher Educators' Extent of Cultural Awareness

教室に異文化を背負った生徒が入ってくるようになった。異文化をどのように受け入れ、自分たちの文化を見直す材料とするか。教師の役割をさぐる。

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## Abstract

Cultural awareness affects what is expected of teachers as it relates to their dispositions regarding the cultural diversity of their classroom. This study focused on the extent of cultural awareness of teacher educators along the four dimensions of Cultural Awareness: a) exploring the global context in which the respondents are regularly updated on issues concerning global and international context; b) learning about different cultures so that respondents accept and respect varying gender roles as perceived by different culture groups; c) knowing ourselves as cultures see the teachers as highly culturally aware by considering themselves as part of a particular culture; and d) communicating across cultural differences showing that teacher educators understand and accept the cultural backgrounds of their students. The study used a descriptive survey method and showed that respondents are lacking in terms of finding connections between subject matter and global issues, getting involved in organization concerning global issues, and finding similarities and differences considering various cultures. Based on the findings, it is recommended to place more emphasis on cultural awareness concepts which will be integrated in the teachings and for future researchers to use the university-wide respondents to get a result that will speak for the whole school.

**Keywords** Culture; cultural awareness; cultural identity; cultural diversity; teacher educators

## Introduction

Culture is the result of the learned patterns of behavior that a community of people experiences and its products are embodied in thought, speech, action, and artifacts (Colander & Hunt, 2008). It refers to the set of shared attitudes, values, goals, and practices that characterize a group of people (Useem, 1963; Banks et al, 1989; & Berjawi, 2010).

Culture is dependent on the capacity for learning through the use of tools, language, and systems of abstract thought. The culture of a society includes

everything in the lives of its members that is of human origin – that is, everything they learn through their direct and indirect contacts with other people.

Cultural awareness, in relation to culture, is the foundation of communication and it involves the ability to stand and becoming objectively aware of our cultural values, beliefs, and perceptions. It also becomes central when we interact with people from other cultures because what is considered appropriate behavior in one culture is frequently inappropriate in another (Quappe & Cantatore, 2005). It

is valuable when it comes to dealing with people. Awareness of the various culture groups and their beliefs and practices could better equip a person to interact with culturally diverse people without worrying about committing blunders or worse, accidentally slighting practices or beliefs of certain groups. It also entails an understanding of how a person's culture may inform their values, behavior, beliefs and basic assumptions. It recognizes that we are all shaped by our cultural background, which influences how we interpret the world around us, perceive ourselves, and relate to other people (Centre for Cultural Diversity & Ageing, 2010).

Our cultural background and orientation shapes who we are, how we relate with people, and how we perceive our environment. Moreover, cultural awareness, which is the focus of this study should not be confused with cultural literacy because the two varies from each other in a sense that cultural literacy was defined by E.D. Hirsch Jr. in his best-selling book published in 1987 (House, Emmer and Lawrence, 1991) as a background for world knowledge. He explains that cultural literacy is the knowledge of past events which have happened in the world. Being culturally literate, an individual has knowledge of what the world has experienced, is experiencing, and what the world will probably experience.

Hirsch also explained in 1987 (as cited by Berjawi, 2010) that cultural literacy is the ability to understand and appreciate the similarities and differences in the customs, values, and beliefs of one's own culture and the culture of others. It is the awareness of specific cultural sensibilities that might affect the way people might think or behave.

A teacher cannot be effective in promoting cultural awareness, as well as in teaching culturally diverse students if he himself does not know his own culture. A teacher, to be effective, has to reflect on his or her cultural foundation and biases about several cultures groups and show an open-minded behavior in dealing with the different cultural backgrounds of his students to promote a cultural aware-

ness and respect among the students.

Studies regarding teachers' cultural awareness are fairly limited, yet it cannot be denied that teachers' cultural awareness plays a very important place in their effectiveness as teachers and in influencing their students.

This is the same as saying that effective teachers must have knowledge of their own cultural backgrounds and embedded preconceived assumptions and biases (Spradlin, 2012).

The study by Scott and Mumford was also supported by Joshi et al (2005) as cited by Lin & Bates in 2010 when they stated that when teachers do not have deep understanding of their own or their students' family backgrounds, they tend to have difficulties building bridges between school and home. A teacher who has limited knowledge or experience with children and parents, who are different from him or her linguistically, culturally, and racially, may feel overwhelmed while dealing with them.

Cultural awareness gives confidence and heightens teacher's effectiveness in dealing with culturally diverse students. Knowing their own cultures will also ensure understanding and reserving biases of others' or their students' cultural orientations which may at times conflict with their own beliefs.

For teachers, it is essential in teaching a culturally diverse classroom and also for improving the educational opportunities and outcomes for minority students (Spradlin, 2012). Biases and discrimination inside the school would be minimized if not eradicated if the teacher understands his/her cultural background and relates to his/her culturally diverse students. Moreover, the teacher would be able to create a safe and stress-free classroom environment which could broaden opportunity for minority students to excel and freely interact inside the classroom as confidently and unafraid as their classmates who belong to the dominant cultures.

Cultural and national identity might be deterred by the emergence of globalization, but the kind of technology that it brings links people of different nationalities with each other and the amazing travel

speed of news fosters the spread of cultural awareness to a whole new level. A recent study about cultural awareness by researchers Lin and Bates (2010) also shows that home visitation of students has a great influence on the cultural awareness of teachers which may help in understanding their students' cultural and family background that may have some bearing on the learning styles and learning performance of the students.

Culturally aware teachers also understand the "behavior, physical movements, verbal and nonverbal language, values, worldview, home environment, and learning styles" of students who are culturally different from themselves. Teachers who are culturally aware have a positive orientation toward minority cultures. "They are thoroughly knowledgeable, sensitive, and comfortable with black and other culturally different children's language, styles of presentation, community values, traditions, rituals, legends, myths, history, symbols, and norms (Irvine, 1989 as cited by Cross, 1998). Teachers who are culturally aware accept differences of people, specially their students, whether it is in terms of race, language, cultural backgrounds, practices, or beliefs.

In the national context, studies and researches regarding cultural awareness had not been greatly researched on but it seems that cultural unawareness is also a growing problem not only for the students and teachers but also among the entire Filipino population.

This dismal state of the basic cultural awareness of the Filipinos is quite frightening and needs to be addressed urgently if we even harbor the hope of redeeming the educational system of our nation. We might not entirely remedy this situation in the national context but we could always start with teaching millions of students in our nation about their culture and their historical background.

To address this, The Medium Term Philippine Development Plan for Culture and the Arts 2004-2010 (MTPDPCA 2004-2010) stated that education plays a key role in the twin tasks of not only identifying and securing the early development of

future artists, but also enhancing the cultural awareness of Filipinos in order that the arts and culture become a part of their daily lives and that they may distinguish the excellent from the mediocre. It is also the responsibility of education to familiarize young Filipinos with world culture and the arts, so that they become well-rounded international citizens.

It seems knowledge of one's own and one's nation's history is not the only vital part in cultivating cultural awareness, it also involves world cultures and arts as stated in the MTPDPCA 2004-2010.

It would be safe then to infer that correcting this rising global problem of cultural unawareness should start in the schools with the students. But to accomplish this would also mean educating teachers in their own cultural awareness.

## Methods

This section focuses on the methods and procedures used in the research. It covers the research design, locale of the study, the methodology used, the data gathering tools, and the data gathering procedures. The research used the descriptive method in considering and analyzing the extent of cultural awareness of the faculty members of the School of Teacher Education in Saint Louis University, Baguio City, Philippines.

### *Research Design*

The study made use of the descriptive -quantitative method in identifying the extent of cultural awareness of the faculty members of the School of Teacher Education in Saint Louis University.

### *Locale of the Study*

The respondents of the study were faculty members of the School of Teacher Education (STE) in Saint Louis University (SLU). Out of the 60 faculty members of STE in SLU, the researchers were able to administer and retrieve 45 questionnaires through the use of random sampling.



### **Data Gathering Tool**

A modified checklist questionnaire patterned from the Cultural Awareness Profile of the NAFSA (National Association of Foreign Student Advisers) was the primary tool used in gathering the data. The academic institutions, government agencies, and private organizations that combined to form NAFSA knew that meeting the needs of students from diverse educational and cultural backgrounds required special knowledge and competencies, thus, forming the MYCAP or My Cultural Literacy Profile to help spread cultural awareness and recognition of the importance of international competence. The questionnaire however was modified to fit in other questions that the researchers believe are important in learning about the cultural awareness of the respondents.

To measure the accuracy and validity of the questionnaire, a reliability test was administered to the faculty members of the College of Teacher Education in Benguet State University, La Trinidad, Benguet, Philippines. The reliability was computed through the use of Cronbach Alpha was 0.97.

### **Treatment of Data**

After the data was gathered, answers were tallied and computed. The weighted means for the extent of cultural awareness of the faculty members in STE – SLU specifically along the four dimensions a) exploring the global context, b) learning about different cultures, c) knowing ourselves as cultural; and d) communicating across cultural differences were extracted using the four-point Likert scale with the corresponding descriptive interpretation as shown in the table below.

| Range of Values | Description                 |
|-----------------|-----------------------------|
| 3.26–4.00       | 4 (Highly Culturally Aware) |
| 2.26–3.25       | 3 (Culturally Aware)        |
| 1.76–2.25       | 2 (Rarely Culturally Aware) |
| 1.00–1.75       | 1 (Not Culturally Aware)    |

The range of values from 3.26–4.00 which corresponds with the description of “Highly Culturally

Aware” means that the respondent teachers exceed expectations in understanding and respecting their culture and the culture of others. It means that the respondent teachers are very much aware that other cultures exist aside from their own and that they accept and respect them. The range values from 2.26–3.25 which corresponds with the description of “Culturally Aware” means that the respondents may not exceeded the expectations but are fairly aware that other cultures exist aside from their own and that they accept and respect them. The third range of values from 1.76–2.25 which corresponds with the description of “Rarely Culturally Aware” means that the respondents are slightly lacking in awareness of their own cultures and the cultures of others.

The last range of values from 1.00–1.75 which corresponds with the description of “Not Culturally Aware,” on the other hand, means that the respondents are not aware of their own culture and the existence of the culture of others.

## **Result and Discussion**

This shows the results and their corresponding analysis and interpretation with regard to the extent of cultural awareness of the faculty members of STE—SLU.

In Table 1, the data shows that within the dimension of exploring the global context, the highest weighted mean of 3.36 is seen on item C: *‘I read/watch international newspapers, TV programs, and/or movies’* which is qualitatively described as “highly culturally aware.” It implies that the faculty respondents are highly updated on issues concerning with global and international context. Teachers must be prepared to teach students who will be citizens of a rapidly changing and interconnected world (NAFSA, 2011). They need to be highly informed with different events whether local, national, or international issues in order to help the students how to think globally. In this new era of globalization, knowledge of the current events and issues are powerful information that needs to be discussed inside the classroom

**Table 1 Extent of Cultural Awareness of the Faculty Members of the School of Teacher Education in Saint Louis University along Exploring the Global Context.**

| Indicators   | Mean<br>n=45 | Qualitative<br>interpretation | Rank |
|--|--------------|-------------------------------|------|
| A. I am knowledgeable about global and international issues.                       | 3.04         | CA                            | 3    |
| B. I find it difficult to find a global connection in most topics I plan to teach. | 2.02         | RCA                           | 9    |
| C. I read/ watch international newspapers, TV programs, and/or movies.             | 3.36         | HCA                           | 1    |
| D. I look for courses that focus on international and global issues and topics.    | 2.67         | CA                            | 7    |
| E. Globalization directly impacts my life.   | 3.23         | CA                            | 2    |
| F. I teach and assess curricular units that explicitly address global issues.      | 2.89         | CA                            | 5    |
| G. I consider how choices I make in my life might have a global impact.            | 3.00         | CA                            | 4    |
| H. I get involved in activities concerned with global issues.                      | 2.73         | CA                            | 6    |
| I. I get involved in organization concerned in global issues.                      | 2.53         | CA                            | 8    |
| <b>Over all mean</b>   | 2.83         |                               |      |

Legend: HCA- Highly Culturally Aware, CA- Culturally Aware, RCA- Rarely Culturally Aware, NCA- Not Culturally Aware

for the students to be able to be clarified of the truth and correct information about such global issues.

Another statement having the 7th rank got a weighted mean of 2.67 and qualitatively interpreted as 'culturally aware' is '*I look for courses that focus on international and global issues and topics*'. This shows that the teacher respondents do not necessarily incorporate subjects or courses focusing on issues—global or international.

Table 2 focuses on the dimension of learning about different cultures. Generally, the teachers are culturally aware and this was presented by the overall mean of 3.17. Evidently, item M '*I accept and respect that male-female roles in families may vary significantly among different cultures (e.g., who makes major decisions for the family, play and social interactions expected of male and female children*' garnered the 1<sup>st</sup> rank which has a mean of 3.6 that was qualitatively interpreted as 'highly culturally aware'. A high number of respondents believe in respecting the varying gender roles as perceived by different culture groups. In and across different cultures there is a great consistency in standards of desirable gender-role behavior.

Item V got the mean of 3.56 and qualitatively interpreted as 'highly culturally aware', '*I accept and respect that customs and beliefs about food, its*

*value, preparation, and use are different from culture to culture.*' The result implies that the respondents do highly respect the cultural differences of his/her students. Culture is similar to an iceberg in that the visible aspects of culture are only a small part of a much larger whole, and we need to learn more about a culture before we can understand the parts that are not visible (Turnridge, 2009).

On the other hand, item D got the lowest mean of 2.31: '*I find it hard to find both similarities and differences when I consider various cultures*', which was qualitatively interpreted as culturally aware, since everyone is a product of their own culture, the teacher needs to increase both self- awareness and cross cultural awareness (Quappe & Cantatore, 2005). The teacher needs to have more understanding of the diversity of the students whether their culture is similar or different from their own.

Learning about different cultures is about exploring the cultures of the students, to be able to handle cultural diversity and to understand the culture that is being manifested inside the classroom by the students. The teacher should also know the cultural differences of the students, so that the teacher would be able to identify the differences and similarities of his own culture from others.

Table 3 dealing with "Knowing Ourselves as Cul-

**Table 2 Extent of Cultural Awareness of the Faculty Members of School of Teacher Education in Saint Louis University along Learning about Different Cultures**

|  | Mean<br>n=45 | Qualitative<br>interpretation | Rank |
|--|--------------|-------------------------------|------|
| A. I believe that talking about common cultural characteristics is different from stereotyping.  | 3.22         | CA                            | 12.5 |
| B. I believe that culture is more about traditions, celebrations, and history done about core values.  | 3.11         | CA                            | 14   |
| C. I believe that the best way to come to know other cultural groups is through international travel.  | 2.6          | CA                            | 21   |
| D. I find it hard to find both similarities and differences when I consider various cultures.  | 2.31         | CA                            | 22   |
| E. I go to cultural events on campus or in my community.   | 2.71         | CA                            | 20   |
| F. I actively promote cultural awareness in my teaching.   | 3.02         | CA                            | 17   |
| G. I am very familiar with a culture group other than my own   | 2.78         | CA                            | 19   |
| H. I believe that the curriculum should be culturally neutral so it appeals to all children.   | 3.44         | HCA                           | 6.25 |
| I. I avoid imposing values that may conflict or be inconsistent with those of cultures or ethnic groups other than my own.   | 3.24         | CA                            | 10.5 |
| J. I discourage people from using racial and ethnic slurs.   | 3.24         | CA                            | 10.5 |
| K. I understand and accept that families defined differently by different cultures ( e.g. extended family members fictive kin, god parents).   | 3.51         | HCA                           | 3    |
| L. I recognized and accept that individuals from culturally diverse backgrounds may desire varying degrees of acculturation into dominant culture.   | 3.38         | HCA                           | 8    |
| M. I accept and respect that male-female roles in families may vary significantly among different cultures (e.g., who makes major decisions for the family, play and social interactions expected of male and female children).  | 3.6          | HCA                           | 1    |
| N. I understand that age and life cycle factors must be considered in interactions with individuals and families (e.g., high value placed on the decisions of elders or the role of the eldest male in families).                | 3.47         | HCA                           | 4    |
| O. Even though my professional or moral viewpoints may differ, I accept the family/parents as the ultimate decision makers for services and supports for their children.   | 3.44         | HCA                           | 6.25 |
| P. I recognize that the meaning or value of medical treatment and health education may vary greatly among cultures.  | 3.22         | CA                            | 12.5 |
| Q. I recognize and understand that beliefs and concepts of emotional well-being vary significantly from culture to culture.  | 3.44         | HCA                           | 6.25 |
| R. I understand that beliefs about mental illness and emotional disability are culturally based. I accept that responses to these conditions and related treatment/interventions are heavily influenced by culture.              | 2.91         | CA                            | 18   |
| S. I accept that religion and other beliefs may influence how families respond to illnesses, disease, disability and death.  | 3.09         | CA 15.5                       |      |
| T. I recognize and accept that folk and religious beliefs may influence a family's reaction and approach to a child born with a disability or later diagnosed with a physical/emotional disability or special health care needs. | 3.09         | CA                            | 15.5 |
| U. I understand that traditional approaches to disciplining children are influenced by culture.  | 3.29         | HCA                           | 9    |
| V. I accept and respect that customs and beliefs about food, its value, preparation, and use are different from culture to culture.  | 3.56         | HCA                           | 2    |
| <b>Over all mean</b>   | 3.17         |                               |      |

Legend: HCA- Highly Culturally Aware, CA- Culturally Aware, RCA- Rarely Culturally Aware, NCA- Not Culturally Aware



**Table 3 Extent of Cultural Awareness of the Faculty Members of the School of Teacher Education in Saint Louis University along Knowing Ourselves as Cultural.**

| Indicators  | Mean<br>n=45 | Qualitative<br>interpretation | Ranking |
|---|--------------|-------------------------------|---------|
| A. I consider myself as being part of a particular culture.                               | 3.67         | HCA                           | 1       |
| B. My cultural identity influences how I perceive the world and how I behave.             | 3.39         | HCA                           | 3       |
| C. I often view others as more cultural than myself.                                      | 2.45         | CA                            | 7       |
| D. I have been in situations where I felt like a cultural outsider.                       | 2.4          | RCA                           | 8       |
| E. I believe that my cultural identity will impact my teaching.                           | 2.71         | CA                            | 6       |
| F. I talk about cultural beliefs, values, and traditions.                                 | 3.11         | CA                            | 5       |
| G. I believe that deep down, most people have similar ideas about what is good and right. | 3.53         | RCA                           | 2       |
| H. I help students recognize their own cultural identity as essential for good teaching.  | 3.29         | HCA                           | 4       |
| <b>Over all mean</b>  | 3.07         |                               |         |

Legend: HCA- Highly Culturally Aware, CA- Culturally Aware, RCA- Rarely Culturally Aware, NCA- Not Culturally Aware

tural” shows that item A which corresponds with the statement “*I consider myself as being part of a particular culture*” has the highest mean of 3.67, also described as highly culturally aware. This implies that the teacher respondents identify with certain cultures. It may be a culture within the family, school, workplace, and also within the community where they live in.

Belonging to a certain cultural group is beneficial to teachers. The more the teachers acknowledge their cultural belongings—the food, music, language, roles, identities, and values given to them by their country, region, race, ethnic heritage, religion, class, sexual orientation, and generation—the more they could see the privileges aspects of their culture afford them. It offers them ability to broaden their minds and to develop cultural sensitivity when dealing with a culturally diverse classroom. Everyone has their own culture. As educators in multicultural communities, when teachers acknowledge their culture, they make room for the realization that their teaching practices and learning environments are embedded with their own cultural codes and traditions (Rose- Cohen, 2004).

According to Rose-Cohen (2004) well-meaning educators and community workers, often find themselves in the paradoxical position of speaking up for the importance of cultural diversity and then claiming that they have no culture themselves.

When they speak of the “diverse community” they live in, their assumption is the “diverse” part does not include them. They have been raised to believe that they are regular—the norm against which other groups are measured (Frankenberg, 1993; McIntosh, 1988; Tatum, 1997). Their self-proclaimed status of cultural neutrality grants them the ability to position themselves in either the center of the multicultural circle as the teacher, facilitator, and mediator, or on the outside of the circle as the observer, social scientist, and tourist. But when they claim that they do not have a culture, it hurts them and hurts those in their classes who presumably do. Examining their own culture has given them credibility as an educator. It required them to take their place on that circle to become a member of a multicultural community.

Most educators, at some point of their teaching careers come to believe that they are immune from the multicultural diversity that covers the whole academic institution and often view themselves as mediators or mere observers of the rich cultures of their students that may sometimes clash inside the classrooms. Yet they come to believe that exploring their own culture helps them understand at a deeper level the workings of their students’ different cultures. They also develop deeper cultural sensitivity and appreciation of the differences and similarities of the cultures surrounding them.

Next in rank as the highest percentage in the

third dimension is item G with a description of “*I believe that deep down, most people have similar ideas about what is good and right.*” This item corresponds with a mean of 3.53, which means that it is highly culturally aware.

The respondents in this research generally believe that most people, regardless of the fact that they come from different cultural backgrounds, have more or less the same inkling of the concept of good and right which is supported by the laws created through the ongoing work of the United Nations—the universality of human rights. This law has been clearly established and recognized in international law. Human rights are emphasized among the purposes of the United Nations as proclaimed in its Charter, which states that human rights are “for all without distinction.” Human rights are the natural-born rights for every human being, universally. They are not privileges (Ayton-Shenker, 1995). Though this law might have been imposed among all culture groups and nations regardless of their beliefs, an array of beliefs in contrast of this view should also be taken into account.

The idea of cultural relativism for example, believes that right and wrong can only be judged relative to a specified society. There is no ultimate standard of right and wrong by which to judge culture (Anderson, 2004).

Rosaldo (2010) also added that cultural relativism is the urgency of studying and learning from other cultures and the belief that because somebody has a different form of life, they are not deranged, or evil.

The idea of right or wrong varies from culture to culture. What might be perceived as wrong in another culture can be seen as acceptable in another. Although there is a general idea of morality or of what is right as decreed by the United Nations Convention on Human Rights, not all culture groups or nations conform to it and the norms and perception of right and wrong may still depend on that of a certain culture group. Teachers should communicate this concept to their students again and again to remind them that what could be a repulsive action to them is

greatly valued by other cultures. They should understand that cultural sensitivity and acceptance means that you might not agree with the cultural practices of others but you should at least respect them.

The third in rank having the highest in percentage among the items in dimension three is item B, which says that “*My cultural identity influences how I perceive the world and how I behave.*” This item has a mean of 3.39 and is estimated as highly culturally aware.

Cultural awareness is an understanding of how a person’s culture may affect their values, behavior, beliefs and basic assumptions. It recognizes that we are all shaped by our cultural background, which influences how we interpret the world around us, perceive ourselves and relate to other people (Centre for Cultural Diversity and Ageing, 2010).

A person’s cultural background affects how a person perceives and reacts to the stimuli around him/her. Our cultural background and orientation shape who we are, how we relate with people and how we perceive our environment.

The dimensions having the lowest mean starts with item D “*I have been in situations where I felt like a cultural outsider*” with the lowest mean of 2.4 and is qualitatively described as rarely culturally aware.

The second lowest mean of 2.45 is item C, which corresponds with the statement “*I often view others as more cultural than myself.*” This is also qualitatively described as culturally aware and shows contradiction to most of the respondent teachers’ answers so far. They might accept and respect other people and their cultures but they don’t believe that these people may at some point be more cultural than themselves.

Preiswerk and Perrot (1975) as cited by Carignan, et al., (2005) identified ethnocentric biases as the means of putting our socio-cultural group and its values in a central position.

The third to the last that has the mean of 2.71 is item E which corresponds to the statement “*I believe that my cultural identity will impact my teaching*” and is qualitatively interpreted as culturally aware.

**Table 4 Extent of Cultural Awareness of the Faculty Members of School of Teacher Education in Saint Louis University along Communicating Across Cultural Differences.**

| Indicators  | Mean<br>n=45 | Qualitative<br>Interpretation | Ranking |
|---|--------------|-------------------------------|---------|
| A. I am comfortable talking with people from other cultural groups.   | 3.4          | HCA                           | 3       |
| B. I believe that the best way to avoid cultural misunderstanding is to treat other people as you would want to be treated. | 3.78         | HCA                           | 1       |
| C. To be an effective teacher, I believe that it is essential to learn about the cultural background of my students.        | 3.71         | HCA                           | 2       |
| D. I am misunderstood because of cultural differences.  | 2.4          | CA                            | 8       |
| E. My cultural identity affects how I communicate with most other people.   | 2.56         | CA                            | 6       |
| F. I notice that people from other cultures use different gestures and body language when they talk.                        | 3.18         | CA                            | 5       |
| G. I adjust my communication styles depending on whom I am talking to.  | 3.24         | CA                            | 4       |
| H. I believe that only certain subjects that are taught in school require teachers to think about issues of culture.        | 2.47         | CA                            | 7       |
| <b>Over all mean</b>  | 3.09         |                               |         |

Legend: HCA- Highly Culturally Aware, CA- Culturally Aware, RCA- Rarely Culturally Aware, NCA- Not Culturally Aware

Teachers must develop a strong cultural identity, also appreciating and respecting that other cultures are different from their own. They can use their understanding to create classrooms that affirm the cultural identity development of the students, while also teaching them how to work respectfully with those who are different from themselves (NAFSA, 2011).

Table 4, dealing with communicating across cultural differences, shows generally culturally aware respondents. Item B “*I believe that the best way to avoid cultural misunderstanding is to treat other people as you would want to be treated*” got the highest weighted mean of 3.78. Understanding and acceptance of the cultural backgrounds of the students does not just go with simple understanding; it also means acceptance. Teachers in multicultural classrooms must be open to their students and put forth the effort needed to get to know their students inside and outside of class. If a teacher is hesitant about being open, the class will reciprocate and the students will become estranged from one another and the teacher. In order to be open, teachers must be interested in their students, fearless, willing to try new and different things, sure of themselves in order to avoid taking things personally, and non-judgmental of his or her students (Canning, 1995 as cited by Fish, 2012).

tal of his or her students (Canning, 1995 as cited by Fish, 2012).

Cultural sensitivity and respect goes together. It is a give and take relationship. You cannot demand other people, including your students, to respect your cultural identity if you are unwilling to give it to them as well. It is a mutual understanding between two parties who are willing to bridge the cultural boundaries separating them and are willing to treat each other as equals.

Item C “*To be an effective teacher, I believe that it is essential to learn about the cultural background of my students*” had a mean of 3.71. Teachers who do not have a deep understanding of their own or their students’ family backgrounds tend to have difficulties building bridges between school and home (Joshi et al., 2005 as cited by Lin and Bates, 2010). Hence, when issues occur, it hinders the effectiveness of the teachers to reach out to their students inside the classroom and bridge the barriers between the subject matter and their students’ everyday lives.

The third is item A “*I am comfortable talking with people from other cultural groups*” with a mean of 3.4 and is qualitatively interpreted as “highly cul-



turally aware.” This implies that as a teacher, learning the cultural backgrounds of one’s students would ease communication between them. To teach in a culturally pluralistic nation, teachers must be able to effectively and respectfully communicate across cultural differences” (NAFSA, 2011). Bridging the gap between different culture groups leads to the understanding and acceptance that various cultures, no matter how different or the same they may be, are on equal footing with each other.

In the article of Quappe & Cantatore (2005), cultural awareness was defined as the “foundation of communication and it involves the ability of standing back from oneself and becoming aware of one’s cultural values, beliefs and perceptions” it explains that by interacting with other people with different culture, it tends to develop the understanding that culture differences needs consideration not only in communicating but also in the field of teaching.

On the other hand, item D “*I am misunderstood because of cultural differences*” with the lowest weighted mean of 2.4 and qualitatively interpreted as “culturally aware” implies that the respondent teachers are positive of their cultural identities and by learning about the cultural backgrounds of the people around them are confident that they are not misunderstood because their cultural identity goes with the cultural identity of others. Generally, the extent of cultural awareness of the faculty members of the school of teacher education at Saint Louis University in terms of communicating across cultural differences is deemed as “culturally aware.”

## Conclusion & Recommendation

Based on the gathered data, the study found that the respondents are more culturally inclined with the items dealing with their being updated about international and global issues and on how these directly affect their lives. They also believe in respecting that gender roles, families, customs and beliefs are defined and may vary from culture to culture. The findings also showed that the respondent teachers

are part of a particular culture group and this cultural background or orientation affects how they perceive the world. They also believe that deep down, most people have a similar concept of what is right and good, and that to be an effective teacher, it is essential to learn about the cultural background of their students and that they need to treat other people as they want to be treated to avoid cultural misunderstandings. However, the findings also showed that the respondents are lacking in terms of finding connections between their subject matter and global issues and in getting involved in organization or groups concerning global issues. They also find it hard to find similarities and differences among the various cultures and in believing that the best way to come to know other cultural groups is through international travel. Also, they rarely attend cultural events in school or in their communities. Lastly, they do not believe that other people are more cultural than themselves and that their cultural identity will impact their teaching.

Based on the findings, it is recommended for Teacher Education Institutions to place more emphasis on cultural awareness concepts which will be visibly integrated into their subject offerings and for future researchers who might want to continue the research must use the university-wide respondents to get a result that will speak of the whole school.

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# Happiness as Life Satisfaction and Human Flourishing: An Economic Perspective

幸福とは何か？ 収入、仕事、自己発  
現、達成感、平等感、健康など、心理  
学や経済学のデータを駆使しながら、  
この大きな問題に迫る。

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## Abstract

Happiness is achieved when the human person achieves his/her human flourishing (Sen, 2000), described as self-determination, self-realization, a life of virtue, the pursuit and lived experience of values, a fullness of life, also called the good life, a certain development as a person and a meaningful existence (Finnis, 1980). Basic human goods and values can be achieved and cultivated only through interaction with other people, through the mutual exchange of benefits, an engagement in society. This paper attempts to provide empirical evidence for such claims, with supporting literature from economics and psychology. First, a verification of the effect of the objective indicators of well-being such as the cognitive dimensions of human needs, i.e., income and the human development index shall be performed, and, second, an explanation of happiness as human flourishing including social comparisons, an evaluation of life based on their relative perceptions of others would be performed. The results show, using ordinary least squares, that although happiness is explained by objective measurements of needs gratification, and, subjective variables describing social comparisons, appraisals and affective experience, persons evaluate their life based on information which have an enduring effect, that is achieved and stabilized with time. Life satisfaction may be evaluated from the angle of contentment for one's current income situation, one's level of needs gratification, and later on, one's capacity to act freely.

**Keywords** happiness, human flourishing, basic needs, income aspiration, economic freedom

## Introduction

An individual's judgment of well-being is affected by their perception of income relative to the income of others, their quality of living relative to that of others, as well as their freedom of movement such as their ability to trade, make business deals, obtain employment, exercise their civic rights and fulfill their duties, as well as their capacity to own property or assets. Aspirations for higher income may lead to

a lowering of one's evaluation of life satisfaction. Due to the process of hedonic adaptation, or the person's capacity to adapt to one's current well-being status, however, income aspirations may increase with current income. Individuals, through time, achieve a more realistic view of their income levels and thus become satisfied with the income they currently have even if they would have aspired for a higher level in the past. People's perceptions of their

income are partly formed by social comparisons. Our level of satisfaction over our income depends on what we see around us. We compare ourselves to our neighbors, friends, colleagues, to a reference group, or as to how we perceive ourselves in the social hierarchy. These observations can be verified using longitudinal studies of subjective well-being and its relation to subjective income evaluations.

However, the anchoring of one's perceptions is based not only on subjective valuations of others. It is also based on objective information such as capabilities or functionings: the ability to exercise one's rights, the ability to communicate one's views, the capacity to obtain education and to improve one's standard of living. Although a person's valuations of one's economic, social and political environment may be limited by the amount of knowledge and information that is made available to everyone, it is possible to explain life satisfaction and happiness using a combination of variables which indicate objective and subjective well-being.

In this study, cross-section data will be used, and thus, only a country average of objective and subjective indicators of well-being will be included in the analysis. The impact of income perceptions, as well as objective income data, will be done on life satisfaction. Differences in the sensitivity of various human-development levels grouped or differentiated across countries shall be done in order to verify the tendency to evaluate life satisfaction, income, capabilities and freedom from social comparisons. Time series analysis cannot be employed in the methodology due to the absence of a complete time series of the variables across the countries included in the study.

The study aims to achieve the following. First, it aims to empirically verify the effect of the cognitive dimensions of human needs, along with the gratification of basic needs. Second, it aims to explain happiness as human flourishing, using objective and subjective indicators of well-being. All objectives would combine the affective and cognitive dimensions of a person's life evaluation. Cross-section

data on life satisfaction, over-all happiness, measurements of basic needs gratification and freedom for the 169 countries included in the Human Development Report 2010, World Values Survey and the Gallup World Poll, will be used.

The literature on happiness research is vast even from the angle of cross-country comparisons of happiness. Focus shall be placed on the effect of subjective income valuations or assessments on happiness and life satisfaction. The relevant literature shall be discussed along with the articulation of the framework.

## **Theoretical Framework**

The capability approach is a strand in welfare economics that focuses on "freedom to promote valuable beings and doings" rather than on "utility" in the sense of "income, commodities, or people's happiness." The capability approach builds on the work of Sen (2000).

Quality-of-life and human flourishing have been main policy goals, thus, an appropriate assessment and measurement of these factors are essential for human development. As a consequence, research on happiness and life satisfaction has focused on a clarification of the happiness approach to incorporate the capabilities approach and quality-of-life research into subjective well-being. (Veenhoven, 2000)

In quality-of-life research, this capability approach is often contrasted with the 'happiness approach' of which Diener (1999) and Veenhoven (1984) are representatives. The present study follows the theoretical and empirical methodology established by Deiner and Veenhoven (Veenhoven, 2000) and Rojas and Veenhoven (2011) in the measurement and analysis of life satisfaction. The anchoring of empirical observations by Deiner and Veenhoven into the mainstream economics literature shall be supported by the writings of Easterlin (1995, 2001) Rablen (2008), Drakopoulos (2008) and Bruni (2007a, 2007b).

Mainstream economics makes use of cardinal

utility when making social comparisons. Social comparisons arise from a concern for a ranked position in the income distribution. Self-comparison generates a process of adaptation to income over time (Rablen, 2008). However, more recent events have a greater effect on one's contextual view of life, i.e. patterns of human survival and freedom. This would have an effect on a person's evaluation of life. One's utility from income then becomes contingent on a reference point, i.e. one's income level over a prolonged period but relative to the over-all income level of a reference group (Rablen, 2008). The reference contingency of income is not arbitrary but is based on an objective view of income. It is related to objective measurements of inequality and deprivation, which are referenced or subjected to one's income group. But inequality and deprivation are concepts which hinge not only on one's income level but are also supported by objective measurements of development as well.

Thus, if the utility from income is reference-contingent and this reference contingency is hinged on objective measurements of income and development, then, one's adaptation to life's events would be evaluated from integrative notions of one's income status. Subjective evaluations of income may explain one's life satisfaction level, only as part satisfaction or contentment. But happiness, which views life satisfaction as a whole, which is enduring, would be hinged on more consistent and stable measurements of income.

### ***a. The Psychology of Happiness***

The succeeding discussion focuses on the conceptual articulation of Veenhoven on how quality-of-life and capabilities enter into subjective well-being research (Veenhoven, 2000).

The term 'capability' denotes chances for a good life, rather than the outcomes of life. Sen's basic idea was that developmental policy should focus on *opportunities* for improving one's lot rather than on the economic *outcomes*. The word 'capability' in Sen's work refers to 'being able', typically being able to improve

one's situation. Freedom from external restraints belongs in the top-left quadrant of Table 1, while the personal competency to use environmental chances belongs in the top-right quadrant. In Sen's work, the emphasis is in the top-left quadrant, in particular where he argues against discrimination. Yet he also highlights education, which is an individual quality.

Under this scheme of denoting capabilities, satisfaction belongs to a person's inner qualities which has life results or outcomes. Veenhoven (2000) distinguishes between satisfaction with parts of life and satisfaction which life-as-a-whole. Several terms are used in the discussions about satisfaction. What shall be articulated are passing satisfaction, part-satisfaction, peak experience, and, life satisfaction. (See Table 1)

**Table 1 Four Kinds of Satisfaction**

|                 | Passing         | Enduring                      |
|-----------------|-----------------|-------------------------------|
| Part of Life    | Pleasure        | Part-Satisfaction             |
| Life-as-a-whole | Peak Experience | Life-Satisfaction (Happiness) |

Source: Veenhoven (1984, 2000, 2010)

Passing satisfaction with a part of life is called pleasure. Pleasures can be sensoric, such as a glass of good wine, or mental, such as the reading of this text. The idea that we should maximize such satisfactions is called 'hedonism'. Part satisfaction refers to an enduring satisfaction with a part of life, also called domain-satisfaction when it concerns a field of life, such as work or marriage, and 'aspect-satisfaction' when it concerns a facet of life, such as its variety. Life satisfaction refers to enduring satisfaction with one's life-as-a-whole and is also commonly referred to as 'happiness' or 'subjective well-being'. (Veenhoven, 1984) In this paper, emphasis shall be placed on life satisfaction as enduring and which views life-as a-whole. The measurement, however, involves two types: life satisfaction as contentment, and, life satisfaction as best-worst, hereon called over-all happiness.

This view of happiness is analogous to the Aristotelian *eudaimonia*, or the person's quest for the



good life, the quest for a life that practices human and civic virtues. The process of achieving this goal, as well as its final achievement, enables one to reach happiness. (Bruni 2007a, pp. 30-33).

### ***b. The Economics of Happiness: Learning from Psychology***

Linking capabilities with life satisfaction would mean that one has to know what capabilities and the exercise of freedom are required for leading a satisfying life. In that context the concern is neither with short-lived pleasures nor with incidental peak experiences. Likewise, satisfaction in particular domains of life does not denote a satisfying life, i.e. not high job-satisfaction if that goes at the cost of low satisfaction with family life.

When an integrative view of happiness is taken into consideration, then, one is eventually looking at happiness as human flourishing, or over-all happiness, not only life satisfaction as contentment. The consideration of happiness and life satisfaction as enduring and integrative is consistent with the tendency for individuals to consider quality of life. But an individual's evaluation of life is primarily based on income, both relative and absolute. Absolute income refers to one's capacity to earn above the income threshold in order to earn a decent living. Relative income, on the other hand, is evaluated according to environmental influences, for example, aspiring to have an income level that would allow a comfortable lifestyle, like that of one's peers, and be affordable (Veenhoven, 1991). The income aspiration hypothesis, as related to life satisfaction, conveys that individuals with high-income aspirations tend to underestimate their level of life satisfaction. Such individuals tend to lower their current levels of happiness when asked to evaluate their life satisfaction (Stutzer, 2004). Although persons may have income aspirations, individuals are capable of adapting to their environment. Pleasures, peak experiences and part satisfaction influence one's outlook and aspiration. All these are lived based on one's current level or standard of living. Thus, income

aspirations and adaptation, also called hedonic adaptation, both influence one's life assessment or life satisfaction. Lastly, people's aspirations are also formed and influenced partly by social comparisons. The greater the inequality in income, the greater the tendency of an individual to be happy when one is living at an income level that allows the minimum of needs satisfaction or fulfillment.

In discussing subjective well-being, however, authors are cautious regarding the stability or consistency of responses brought about by hedonic adaptation. Self-reports of happiness may contain errors as regards judgments on life. The current study hinges on the capacity of the human development index to allow an objective anchoring of subjective life valuations. Consistency in responses need not denote prolonged bias over life views when correlated to normative measurements of well-being (Comim, 2005). Normative views, then, on survival, health, education and autonomy or freedom would combine well to explain subjective valuations of life, as they are based on objective and economically measurable human needs.

Based on these insights, a relationship between life satisfaction, income aspiration, hedonic adaptation, capabilities, freedom and social comparisons shall be established, aside from the traditional variable, income, used to explain life satisfaction. Three propositions shall be formulated, taken from Stutzer (2004) and Drakopoulos (2008).

First, individual judgments of well-being are affected by their aspiration level over and above the effect of income and other individual characteristics. According to aspiration level theory, high income aspirations lead to a lower rate of subjective well-being or satisfaction, if current income is lower than the aspired income level. The conditions provide the essence of the hierarchical approach to life satisfaction. Income has a positive effect on life satisfaction. The implication indicates that income does not provide the same rate of satisfaction once a given income level has been reached, although it continues to have a positive effect (Drakopoulos, 2008). Once

basic needs are met, income ceases to be the most important variable to explain life satisfaction.

Second, due to processes of hedonic adaptation, people's income aspirations increase with their income and are thus positively dependent on their past income. Among the individual characteristics to control for income are variables measuring constitutive characteristics of the individual such as capabilities and economic freedom.

Third, people's income aspirations are partly formed by social comparisons. They build their aspirations based on a relevant others: their friends, community, or nation. It is to be expected that a higher average income level in a community is pushing up an individual's aspiration level and that this effect is larger for people who actively interact with other members of the community.

The three concepts of income aspiration, hedonic adaptation and social comparisons, economic concepts which have been enriched by the writings of Deiner, et al (1999), Kahneman and Veenhoven (1991), affect satisfaction and happiness from the angle of a cognitive evaluation of life experiences, in the language of psychology and sociology. In this sense, happiness is viewed as an overall evaluation of life, and, affective and cognitive appraisals constitute the hedonic aspect of affect and contentment (Veenhoven, 1984, 1991, 2009 and Veenhoven, et al, 2011).

One's over-all appraisal of life is anchored not on arbitrary mental constructs, which are variable. Rather, one's life appraisal is formed by innate needs, values and life direction or purpose. Needs and values are influenced by culture, but, are also formed by the person's capacity to determine what is good for oneself. Such appraisals, norms or standards are invariant; they are lasting. (Veenhoven, 1991)

Hedonic experiences interact with the objective and subjective goods which happen in life, and enables the person to judge the conditions which enables one to interact and respond to the demands of human nature. Needs have to be suf-

ficiently satisfied so as to enable persons to live as human beings. If the minimum of one's needs are being met, people feel good and on that basis tend to judge their life positively (Veenhoven, 1991). As a consequence, individuals adapt to the environment and one's evaluation of life in terms of happiness or satisfaction becomes consistent over a long period. The consistency of evaluations of life may evolve and change through time, but the change is a result of the person's judgment of their own well-being, i.e. psychological view and moral sphere. But the importance placed by the respondents on autonomy and self-determination in their life evaluations show that objective constituent factors explain happiness. Commitment to a set of goals provides a sense of personal agency and a sense of structure and meaning to daily life (Deiner et al, 1999).

The satisfaction of basic needs is only a necessary condition, it is not a sufficient condition for happiness. The methods of economics, psychology and sociology can only formulate the necessary conditions for happiness. These sciences do not claim to explain happiness in the fullness of its meaning.

The claims on happiness are valid even when we consider the happiness levels of nations. For example, The Philippines scored higher in terms of life satisfaction as contentment and over-all happiness than Bulgaria, even though Bulgaria has more than double the per capita gross national income of Php 4,002 of the Philippines as of 2008 (See Table 2). Bulgaria also has a lower level of income inequality, a higher level of economic freedom, and a higher level of human development than the Philippines, but RP's life satisfaction and over-all happiness score from 2006 to 2009 is significantly higher than Bulgaria, a country forming part of the high income and high human development set of nations. On the other hand, Bangladesh, a country whose life satisfaction and over-all happiness score is slightly higher than the Philippines, has only a third of RP's per capita gross national income, belongs to the low income and low HDI set of countries, has a much higher income inequality index, and a lower level of

economic freedom index than the Philippines.

Inclusive economic development results from the achievement of easy access especially to the lower income strata of basic needs and secondary needs. There is no assurance, on the other hand, that the achievement of such secondary needs would bring an increase in happiness. Thus, happiness is achieved when individuals in a society achieve basic needs, but, a further improvement in income and therefore a demand for luxuries and non-basic goods and services, do not necessarily further increase happiness (Drakopoulos, 2008). Bruni (2007a, 2007b) argues that social or interpersonal relationships, friendship, the development of trust in the market economy, all bring about greater happiness in countries with higher income than the mere gratification of basic needs.

The above-mentioned tenet can only be shown empirically. Mainstream economics, to date, still does not provide a formal mechanism to show how the gratification of basic needs and the satisfaction of secondary needs translate into happiness. Neoclassical economics has translated happiness to merely a matter of preferences and non-quantifiable value judgments. Due to the logical positivist foundations of rational choice theory, preferences or choices that would lead to happiness have been reduced to sentiments, and sentiments are non-scientific or irrational. This conceptualization of happiness is contradictory

to the Cambridge tradition of viewing happiness as goal-oriented, *eudaimonia*, more akin to human flourishing, the pursuit of virtue. Psychologists and sociologists, on the other hand, have developed a view of rationality which connects affect and cognition to economic decision-making. Their findings are being accepted and tested by behavioral economists in order to verify the assumptions behind choices thereby enriching the conceptualization of economic rationality. (Bruni, 2007a, 2007b)

## Empirical Methodology

An attempt to estimate the individual's assessment of happiness, based on the methodology formulated by Rojas and Veenhoven (2011). Veenhoven (1984, p. 22–32), distinguishes between 'overall' happiness and 'components' of happiness, assuming that the latter function as 'sub-totals' in the overall evaluation of life. Overall happiness is defined as "the degree to which an individual judges the overall quality of his life-as-a-whole favorably." Over-all happiness can be categorized into two components: hedonic level of affect and contentment.

In the hedonic level of affect Veenhoven (2009) states that we experience different kinds of affects: feelings, emotions and moods. We typically estimate the pleasantness in feelings, in emotions, as well as in moods. Veenhoven (2009) calls this 'hedonic

**Table 2 Comparison of Selected Countries**

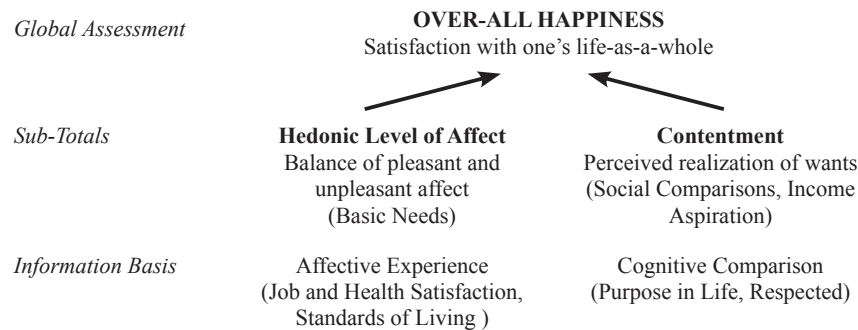
|             | Life Satisfaction as Contentment | Over-All Happiness | Real Gross National Income per Capita (2008) | Human Development Index | Non-Income Human Development Index | Gini Coefficient 2000-2010 | Economic Freedom Index |
|-------------|----------------------------------|--------------------|--|-------------------------|------------------------------------|----------------------------|------------------------|
| Norway      | 8.1                              | 7.5                | 58,810                                       | 0.94                    | 0.95                               | 25.8                       | 68.80                  |
| Australia   | 7.9                              | 7.4                | 38,692                                       | 0.94                    | 0.99                               | 35.2                       | 81.68                  |
| Bulgaria    | 4.4                              | 3.8                | 11,139                                       | 0.74                    | 0.80                               | 29.2                       | 63.48                  |
| Brazil      | 7.6                              | 6.4                | 10,607                                       | 0.70                    | 0.73                               | 55.0                       | 57.12                  |
| Thailand    | 6.3                              | 5.9                | 8,001  | 0.65                    | 0.68                               | 42.5                       | 63.24                  |
| Philippines | 5.5                              | 4.7                | 4,002  | 0.64                    | 0.73                               | 44.0                       | 56.28                  |
| Indonesia   | 5.7                              | 4.9                | 3,957  | 0.60                    | 0.66                               | 37.6                       | 53.44                  |
| India       | 5.5                              | 5.5                | 3,337  | 0.52                    | 0.55                               | 36.8                       | 53.68                  |
| Zimbabwe    | 2.8                              | 3.5                | 176  | 0.14                    | 0.47                               | 50.1                       | 27.82                  |

Source: Human Development Report 2010, World Values Survey, Gallop World Poll



level of affect' and this concept fits the above-mentioned 'affective' definitions of happiness. Contentment is another component of over-all happiness. Most adults evaluate their life with the use of reason and compare life-as-it-is with notions of how they want life-to-be. The degree to which an individual perceives his wants to be met is called 'contentment' by Veenhoven and this concept equals the above mentioned 'cognitive' definitions of happiness. This concept presupposes that the individual has developed some conscious wants and has formed an idea about their realization (See Figure 1). The operationalization of these psychological concepts, are summarized in Table 3. The presupposed empirical consequences are not fixed as the individual's behavior may vary depending on the substrate, i.e. human nature and culture.

Now that the concept of happiness has been defined, the operationalization of one's evaluation of life shall begin by using a robust estimator for life satisfaction, the 11-scale life satisfaction measurement (i.e. life satisfaction as contentment, and, over-all happiness using the Cantril ladder scale developed by Cantril, 1967), objective indicators of well-being such as the human development index and the gross national income per capita, and, subjective measurements of family income such as the inequality of income index (perceptions or subjective measurements of family income) shall be used along with selected subjective well-being measurements such as the experience of respect, social support, having a purpose in life and improvements in the standard of living, as reported in the Gallup World Poll. The matching of such indicators with the



Source: Veenhoven (2009)

**Fig. 1 Happiness and its Components**

**Table 3 Explanation of Over-all Happiness and its Components**

| Concept                        | Definition  | Empirical Consequences   |
|--------------------------------|---|--|
| <b>Over-all Happiness</b>      | <ul style="list-style-type: none"> <li>The degree and attitude to which an individual judges the overall quality of his life-as-a-whole, drawing on different sources of information, called 'components' of happiness.</li> </ul>                    | <ul style="list-style-type: none"> <li>How well we live up to standards of the good life, how well we feel affectively.</li> </ul>   |
| <b>Hedonic level of Affect</b> | <ul style="list-style-type: none"> <li>Feelings, emotions, moods, with its different dimensions: active–inactive, and, pleasant–unpleasant ('hedonic tone').</li> <li>Assessment is in terms of pleasantness in feelings, emotions, moods.</li> </ul> | <ul style="list-style-type: none"> <li>Does not presume subjective awareness of an average level.</li> <li>One can feel good most of the time, without being fully aware of that.</li> </ul> |
| <b>Contentment</b>             | <ul style="list-style-type: none"> <li>Evaluate their life with the use of reason and compare life-as-it-is with notions of how they want life-to-be.</li> </ul>  | <ul style="list-style-type: none"> <li>Presupposes that the individual has developed some conscious wants and has formed an idea about their realization</li> </ul>                          |

Source: Veenhoven (2009)

variables are presented in the following table. (See Table 4)

Due to the possible bias that can occur when relating the components of happiness with over-all happiness and contentment, the study makes use of objective indicators of needs gratification. The use of objective indicators allows the identification of a benchmark, with the use of a robust indicator such as income per capita and the non-income human development index, when comparing evaluations of happiness across countries. The interrelationships among the variables will result to a formulation of happiness that is strengthened by the use of all the variables chosen to characterize human flourishing.

Now that the variables used in the study have been defined and operationalized, the hypotheses to be tested can be formulated.

**Hypothesis 1. Life satisfaction (contentment) and over-all happiness can be explained by the gratification of basic needs and by the cognition of one's life satisfaction relative to society.**

The cognition of life satisfaction, usually through a comparison of one's income relative to society, can be explained by income aspiration, the perception of inequality, and one's reflected appraisal of society such as having respect for others, having a purpose in life and the presence of social support networks.

Income aspiration is affected by social comparisons, and therefore adjusts relative to one's standing or position in relation to others. Through time, the assessment of one's life satisfaction adapts to the environment and becomes stable.

The first hypothesis intends to capture the effect of variables indicating human flourishing, i.e. income, the non-income human development index as well as subjective measurements of well-being from the World Values Survey and Gallup World Polls which explain the effect of social constructions such as percentage of population having a purpose in life, are respected, have a social network, and social comparisons such as income aspirations and income inequality.

These variables shall be regressed on both measurements of happiness. All the explanatory variables indicating social construction are expected to have a positive sign when regressed with life satisfaction (contentment) and over-all happiness as dependent variables. The signs of the income inequality variable and the income aspiration variable are expected to be either positive or negative depending on the HDI level.

Countries with a higher level of income and human development would experience lower levels of income inequality indexes (perceptions of

**Table 4 Variables used in the Regression**

|   |   |
|---|---|
| Life Satisfaction (LS)  | Over-all Happiness (Life satisfaction as best-worst averaged from 2006 to 2009) and Life satisfaction (contentment, averaged from 2006 to 2009). These indicators were obtained from the World Values Survey  |
| Non-Income HDI (NINCHDI)  | Non-Income Human Development Index (HDI) for 2010. This variable captures the effect of the gratification of basic needs to life satisfaction.  |
| Real Gross National Income per Capita (INCOME) and the Inequality of Income | Logarithm of gross national income per capita for 2010, obtained from the UNDP Human Development Report for 2010. The Inequality of Income Variable used is the GINI Coefficient averaged from 2000 to 2010.  |
| Economic Freedom Index (EFI)  | Economic Freedom Index averaged from 2006 to 2010. The compounded growth rate of the economic freedom index from 1995 to 2010 shall also be included to incorporate the effect of sustained levels of economic freedom for some countries, obtained from the 2011 Economic Freedom Index published by the Heritage Foundation, Inc.   |
| Subjective Well-Being (SWB)   | Subjective well-being indicators: (Indicators of reciprocity: percentage of respondents who perceive that there is respect of persons in society, have social support networks and have a purpose in life); standard of living, job, personal health satisfaction and negative experience. Income aspiration variable, hedonic adaptation variable (uses the compounded growth rate of the economic freedom index from 1998 to 2010, and, the life aspiration variables) all which are expected to be positive and significant for high HDI countries |

income inequality) than countries which have a lower income level and human development index. Income inequality and income aspiration are expected to have a negative and positive correlation, respectively, with life satisfaction (contentment) and over-all happiness for countries with a high HDI. When individuals realize that their current income is the same, or, is above their aspired-for income, then, the income aspiration variable would have a significant positive correlation with life satisfaction (contentment) and over-all happiness.

For countries with a moderate to low level of development, the need to gratify basic needs and to have a life sustaining income may be a priority in order to achieve happiness. Thus, the income inequality may not even be significant. However, the knowledge that one's current level of income is below one's aspired-for income would mean that income aspiration has a significantly negative correlation with life satisfaction (contentment) and over-all happiness.

The relative valuations of the responses shall be incorporated in the same regressions made by HDI level: medium to low (HDI level less than 0.68) and high to very high (HDI level greater than or equal to 0.68).

**Hypothesis 2. Life satisfaction (contentment) and over-all happiness increase when other variables which incorporate affective experience, adjustment of standards, and, the inclusion of basic and constitutive needs such as economic freedom, all of which characterize human flourishing, are included.**

The basic claim of this analysis is that economic freedom and autonomy freedom complement each other in the enhancement of an individual's well-being. For a given level of autonomy freedom, the probability of greater well-being is higher for individuals who live in countries with a higher level of economic freedom and lower for individuals who live in countries with a lower level of economic freedom. Also, given increase in autonomy freedom has a larger impact on well-being in countries where

economic freedom is lower and a smaller impact on well-being in countries where economic freedom is higher (Bavetta et al, 2011). Thus, we can expect that the economic freedom index averaged from 2006 to 2010 is expected to have a higher coefficient value for high HDI countries in comparison to the coefficient of the model for medium to low HDI countries.

The inclusion of other subjective well-being variables which incorporate affective experience such as job, standard of living and personal health satisfaction, and, the experience of something negative, garner a more robust explanation of over-all happiness and contentment. Only the negative experience variable is expected to be negative, while the other variables are expected to be positive.

Aside from affective experience, another variable, under social construction, a cognitive variable, is hedonic adaptation. This signifies that through time, that is, a prolonged experience of economic freedom and the gratification of basic needs, countries become happier or more contented, even with the onset of negative experiences. This means that countries with high HDI, who also have a positive growth rate for economic freedom, basic needs, income and income aspirations, as well as the social comparison and social construction variables all have greater explanatory power than for countries with low to medium HDI. Cross-section data shall be used across 169 countries included in the Human Development Report.

The cardinalized nature of the life satisfaction measurements enables one to perform robust statistical tests on the factors explaining one's valuation of happiness and life satisfaction. The study uses ordinary least squares regression, corrected for inherent variations or differences, which are non-random, in life evaluations across countries or heteroskedasticity, in order to determine the explanatory power of the selected variables to life satisfaction. The presence of a difference in income perceptions by human development level, that is, grouping the countries into low to medium human development index, and, high to very high human development index is deter-



mined using the Chow Breakpoint test, an empirical method which tests whether dividing the data set into two groups: high and very high HDI versus medium to low HDI would incur significantly different regression results. Appropriate tests shall be used in order to determine the validity and difference of the coefficients resulting from the regressions for both groups of countries.

## Results of the Study

The results of the study are presented using the three hypotheses formulated.

**Hypothesis 1. Life satisfaction (contentment) and over-all happiness can be explained by the gratification of basic needs and by the cognition of one's life satisfaction relative to society.**

Both sets of regression results for contentment and over-all happiness show that obtaining higher income, the gratification of basic needs, the fulfillment of an income level that goes beyond one's aspired for income, the cognition that one's human development and income level is higher or better than society as a whole, and one's appraisal of society's values: having a purpose in life, respect and the presence of social support networks all increase one's happiness level. All these variables have a significant level of explanatory power for high HDI countries. The conjecture that once a country achieves an income level that goes beyond the

aspired for income and has experienced many years of basic needs gratification, then such a society is more able to appreciate values in relation to one's social environment. Thus, the greater the number of persons who have a purpose in life, are respected and have social support networks, the greater is their over-all happiness level. (See Table 5)

The explanatory power of the model with the inclusion of social comparison and constructs significantly increased, except for the medium to low HDI countries. Even the expected sign for the income aspiration variable for high vis-à-vis medium to low HDI countries are empirically verified. The results show that interrelationships, though made only on the basis of social comparisons and constructs, have a greater capacity to explain the happiness of nations. However, other variables will be needed to explain the over-all happiness level of medium to low HDI countries.

**Hypothesis 2. Life satisfaction (contentment) and over-all happiness increase when other variables which incorporate affective experience, adjustment of standards, and, the inclusion of basic and constitutive needs such as economic freedom, all of which characterize human flourishing, are included.**

The indicators which explain need-satisfaction, social construction, comparison, reflected appraisal and affective experience have all contributed to

**Table 5 Basic Needs, Income and Happiness**

| Variables   | Expected Sign | Happiness as Contentment |             |                   | Over-all Happiness (Evaluative Happiness) |             |                   |
|---|---------------|--------------------------|-------------|-------------------|---|-------------|-------------------|
|   |               | All Nations              | High HDI    | Medium to Low HDI | All Nations                               | High HDI    | Medium to Low HDI |
| C   | + or -        |                          | N*          |                   |   | N*          | pp                |
| Income per capita<br>(Logarithm of Real Gross National Income per capita) | +             | P*                       | N*          | P*                | P*  | P*          | P*                |
| Non-Income HDI  | +             | P*                       | p           | P*                | p   | P*          | p                 |
| <b>R<sup>2</sup> adjusted</b>   |               | <b>0.63</b>              | <b>0.37</b> | <b>0.5</b>        | <b>0.66</b>                               | <b>0.47</b> | <b>0.5</b>        |
| Number of Observations  |               | 144                      | 77          | 67                | 132                                       | 71          | 61                |

Sources: World Database of Happiness, UNDP, Author's Framework

Note: n (negative) and p (positive) refer to the p-values and signs of the explanatory variables. P\* or N\* refers to a p-value of < 0.01, pp or nn refers to a p-value of 0.02-0.05, p or n refers to a p-value of 0.06-0.15. Empty cells refer to not significant coefficients of the variables. (See Appendix 3 for the coefficients)

explaining the trend across countries as regards happiness evaluations. The perception of respect for persons in society was removed in the regression as the variable's explanatory power is no longer significant. The other variables have increased their significance in explaining over-all happiness and contentment especially for high HDI countries. In fact, the regression models which explain happiness as human flourishing garnered the best results. (See Table 6)

Surprisingly, life satisfaction as contentment increases when economic freedom decreases for the regressions in high and very high HDI countries as the expected relationship is positive. The result may be explained by the prolonged years in which high-income countries have experienced autonomy and freedom. As a result, a slight decrease in the

economic freedom indexes of high-income countries turns out to have a negative sign for life satisfaction.

On the other hand, when considering the level of economic freedom from 2010 as compared to the economic freedom level in 1998, the result is a positive sign for over-all happiness, although the coefficient is not significantly different from zero. This means that the greater the change in the economic freedom index for high to very HDI countries, a slight increase in over-all happiness ensues.

The low to middle HDI countries moderately increase their over-all happiness when economic freedom increases. However, these countries still have to manifest a sustained level of increases in economic freedom for the variable to cause an increase in over-all happiness.

Hedonic adaptation behavior is not captured by

**Table 6 Happiness as Human Flourishing**

| Variables                           | Expected Sign | Happiness as Contentment |           |                   | Over-all Happiness (Human Flourishing) |           |                   |
|-------------------------------------|---------------|--------------------------|-----------|-------------------|--|-----------|-------------------|
|                                     |               | All Nations              | High HDI  | Medium to Low HDI | All Nations                            | High HDI  | Medium to Low HDI |
| C                                   | + or -        |                          |           |                   | <i>N*</i>                              | <i>N*</i> |                   |
| <b>Gratification of Basic Needs</b> |               |                          |           |                   |  |           |                   |
| Income per capita                   | +             | <i>P*</i>                | <i>pp</i> |                   | <i>P*</i>                              | <i>p</i>  | <i>pp</i>         |
| Non-Income HDI                      | +             | <i>pp</i>                | <i>p</i>  | <i>pp</i>         |  |           | <i>pp</i>         |
| Economic Freedom (2006-2010)        | + or -        |                          | <i>nn</i> | <i>p</i>          |  |           |                   |
| <b>Social Construction</b>          |               |                          |           |                   |  |           |                   |
| Gini Coefficient (2000-2010)        | + or -        |                          | <i>p</i>  |                   |  | <i>p</i>  |                   |
| <b>Comparison</b>                   |               |                          |           |                   |  |           |                   |
| Income Aspiration                   | + or -        | <i>N*</i>                | <i>nn</i> | <i>N*</i>         | <i>P*</i>                              | <i>P*</i> |                   |
| <b>Reflected Appraisal</b>          |               |                          |           |                   |  |           |                   |
| Having a Purpose in Life            | +             | <i>pp</i>                | <i>pp</i> |                   | <i>p</i>                               | <i>P*</i> |                   |
| Presence of Social Networks         | +             | <i>pp</i>                | <i>P*</i> |                   | <i>pp</i>                              | <i>pp</i> |                   |
| <b>Affective Experience</b>         |               |                          |           |                   |  |           |                   |
| Personal Health Satisfaction        | +             |                          |           |                   | <i>p</i>                               |           | <i>P*</i>         |
| Job Satisfaction                    | +             | <i>pp</i>                | <i>pp</i> |                   | <i>p</i>                               | <i>pp</i> |                   |
| Standard of Living Satisfaction     | +             | <i>P*</i>                | <i>P*</i> | <i>pp</i>         | <i>P*</i>                              | <i>P*</i> |                   |
| Negative Experience                 | -             |                          | <i>n</i>  |                   |  | <i>n</i>  |                   |
| R <sup>2</sup> adjusted             |               | 0.85                     | 0.88      | 0.65              | 0.86                                   | 0.84      | 0.77              |
| Number of Observations              |               | 144                      | 77        | 67                | 132                                    | 71        | 61                |

Source: World Database of Happiness, UNDP, Author's Framework

Note: n (negative) and p (positive) refer to the p-values and signs of the explanatory variables. *P\** or *N\** refers to a p-value of < 0.01, *pp* or *nn* refers to a p-value of 0.02-0.05, *p* or *n* refers to a p-value of 0.06 - 0.15. Empty cells refer to not significant coefficients of the variables.

the variables as countries with high HDI still manifest a need to reach their aspired-for income, as the result for life satisfaction as contentment has a negative sign for the income aspiration variable. The compounded growth rate for economic freedom is not significant. Thus, even if countries with high HDI may have experienced a sustained level of economic growth for at least 10 years, they still aspire for a higher level of income.

Comparing this result with the over-all happiness assessment across nations, when individuals are given a chance to reflect on their best possible world and made to assess and compare it with their current life, a more sober evaluation of happiness results. Current levels of income are close to reaching their income aspiration. They are happy with their current level of personal health and social support, whereas, the income aspiration variable, personal health and social support network satisfaction are not significant with medium to low HDI countries.

For low to moderate HDI countries, both income and the human development indexes, the variables reflecting the most constitutive of human needs, including their satisfaction for personal health, all explain over-all happiness. The other explanatory variables are not strong enough to cause an impact in the happiness evaluations of low to moderate level HDI countries.

Another surprising result is the positive effect of the Gini coefficient, the variable representing the effect of social comparisons, with over-all happiness and contentment. Nations increase their happiness level even with slight increases in income inequality.

What could explain the difference in the sign of the income aspiration variable among high HDI countries is that income aspiration variable is significantly negative when countries assess their life satisfaction contentment level and is positive when countries assess their over-all happiness level. Take note that the constant,  $C$ , in the model is significant and negative for over-all happiness, while it is not significant for contentment. The constant measures the level of happiness when all the variables are

removed in the model. This means that when an individual's basic needs, including freedom, are not gratified, there is no inequality because there is no income, perceptions of purpose in life and social support are non-existent, and, persons are not satisfied with their personal health, job and standard of living, then, one's current life evaluation is way below one's perceived best possible life, resulting to a negative over-all happiness level, signifying misery. When life is evaluated integrally, over-all happiness is assessed based on what it could have been without the current state of amenities. Pessimism diminishes and one becomes happy with the current level of income.

## Conclusion

The results show that both objective and subjective indicators have a greater ability to explain life satisfaction across countries and across periods, with a more integrated view of life observed for the life satisfaction (best-worst) or over-all happiness case.

The stability and consistency of the hedonic adaptation indicator signifies that the evaluation of life satisfaction is made across time and is not subjected to arbitrary assessments. Income aspiration then affects life satisfaction when anchored or considered in relation to one's life as a whole and across time. This is more observed with high and very high HDI countries. (See Table 6)

Another manifestation of the life-as-a-whole assessment of life satisfaction or over-all happiness and contentment is the greater capacity of income per capita, the non-income human development index, income aspiration, and the reflected appraisal and affect variables to predict life satisfaction evaluations. The results are consistent whether or not the data is grouped by HDI level. Thus, the assessment of happiness based on the relative contingency effect, as observed in the income aspiration variable, and relative deprivation assessment of individuals, as observed in the Gini coefficient, are a result of a more enduring, permanent or consistent life evaluations.

The analysis of the regression results are more akin to a conclusion that life evaluations, although they include both objective and subjective valuations of well-being, are a result of a rational choice and decision, rather than arbitrary mental constructs.

The enrichment of the utility function, using life evaluations of happiness as contributed by the science of psychology to economics, has resulted to a more realistic and humane view of happiness. Even from an economics standpoint, happiness is indeed human flourishing.

## Suggestions for Future Research

The anchoring of life satisfaction measurements on objective and enduring or stable subjective measurements of well-being show that the utility of income follows mainstream economic theory even in the presence of social comparisons and relative deprivations. Further research can be made on a more firm and empirically verified theoretical grounding for reference contingency behavior and prospect theory. This suggestion is in line with the suggestions of Rablen (2008).

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## Appendix 1 Descriptive Statistics of Chosen Indicators

|  | Life Satisfaction<br>as Contentment | Over-All<br>Happiness | Real Gross<br>National Income<br>per Capita (2008)<br>In US\$ | Human<br>Development<br>Index<br>2010 | Non-Income<br>Human<br>Development<br>Index<br>2010 | Gini Coefficient<br>2000-2010 | Economic<br>Freedom Index<br>2006-2010 |
|--|-------------------------------------|-----------------------|---|---------------------------------------|---|-------------------------------|--|
| <b>All Countries</b>   |                                     |                       |   |                                       |   |                               |  |
| Mean   | 5.86                                | 5.43                  | 13,737.49   | 0.64                                  | 0.68  | 40.79                         | 59.91                                  |
| Median   | 5.85                                | 5.27                  | 7,258.000   | 0.68                                  | 0.72  | 39.80                         | 58.96                                  |
| Maximum  | 8.50                                | 8.00                  | 81,011.00   | 0.94                                  | 0.99  | 74.30                         | 89.58                                  |
| Minimum  | 2.40                                | 3.22                  | 176.00  | 0.14                                  | 0.28  | 16.80                         | 27.82                                  |
| Observations   | 144                                 | 132                   | 169   | 169                                   | 169   | 145                           | 163                                    |
| <b>High HDI Countries (HDI Level from 0.68 to 0.94)</b>          |                                     |                       |   |                                       |   |                               |  |
| Mean   | 6.65                                | 6.10                  | 24,029.24   | 0.79                                  | 0.82  | 37.03                         | 66.02                                  |
| Median   | 6.70                                | 6.08                  | 21,004.00   | 0.78                                  | 0.80  | 36.00                         | 66.11                                  |
| Maximum  | 8.50                                | 8.00                  | 81,011.00   | 0.94                                  | 0.99  | 59.60                         | 89.58                                  |
| Minimum  | 4.30                                | 3.79                  | 4,038.00  | 0.68                                  | 0.68  | 16.80                         | 38.52                                  |
| Observations   | 77                                  | 71                    | 85  | 85                                    | 85  | 69                            | 82                                     |
| <b>Low to Medium HDI Countries (HDI Level from 0.14 to 0.67)</b> |                                     |                       |   |                                       |   |                               |  |
| Mean   | 4.96                                | 4.65                  | 3,323.23  | 0.48                                  | 0.53  | 44.19                         | 53.71                                  |
| Median   | 5.00                                | 4.65                  | 2,212.00  | 0.48                                  | 0.53  | 43.05                         | 54.15                                  |
| Maximum  | 7.60                                | 6.21                  | 22,218.00   | 0.67                                  | 0.77  | 74.30                         | 69.34                                  |
| Minimum  | 2.40                                | 3.22                  | 176.00  | 0.14                                  | 0.28  | 29.80                         | 27.82                                  |
| Observations   | 67                                  | 61                    | 84  | 84                                    | 84  | 76                            | 81                                     |

Source: Human Development Report 2010, World Values Survey, Gallop World Poll 2010

## Appendix 2 Countries Included in the Study Grouped by Human Development Index Level

| Very High        | High                   | Moderate           | Low              |
|------------------|------------------------|--------------------|------------------|
| Norway           | Bahamas                | Fiji               | Kenya            |
| Australia        | Lithuania              | Turkmenistan       | Bangladesh       |
| New Zealand      | Chile                  | Dominican Republic | Ghana            |
| United States    | Argentina              | China              | Cameroon         |
| Ireland          | Kuwait                 | El Salvador        | Myanmar          |
| Liechtenstein    | Latvia                 | Sri Lanka          | Yemen            |
| Netherlands      | Montenegro             | Thailand           | Benin            |
| Canada           | Romania                | Gabon              | Madagascar       |
| Sweden           | Croatia                | Suriname           | Mauritania       |
| Germany          | Uruguay                | Bolivia            | Papua New Guinea |
| Japan            | Libyan Arab Jamahiriya | Paraguay           | Nepal            |
| Korea            | Panama                 | Philippines        | Togo             |
| Switzerland      | Saudi Arabia           | Botswana           | Comoros          |
| France           | Mexico                 | Moldova            | Lesotho          |
| Israel           | Malaysia               | Mongolia           | Nigeria          |
| Finland          | Bulgaria               | Egypt              | Uganda           |
| Iceland          | Trinidad and Tobago    | Uzbekistan         | Senegal          |
| Belgium          | Serbia                 | Micronesia         | Haiti            |
| Denmark          | Belarus                | Guyana             | Angola           |
| Spain            | Costa Rica             | Namibia            | Djibouti         |
| Hong Kong, China | Peru                   | Honduras           | Tanzania         |
| Greece           | Albania                | Maldives           | Côte d'Ivoire    |
| Italy            | Russian Federation     | Indonesia          | Zambia           |

| Very High            | High                   | Moderate                         | Low                         |
|----------------------|------------------------|----------------------------------|-----------------------------|
| Luxembourg           | Kazakhstan             | Kyrgyzstan                       | Gambia                      |
| Austria              | Azerbaijan             | South Africa                     | Rwanda                      |
| United Kingdom       | Bosnia and Herzegovina | Syrian Arab Republic             | Malawi                      |
| Singapore            | Ukraine                | Tajikistan                       | Sudan                       |
| Czech Republic       | Iran                   | Viet Nam                         | Afghanistan                 |
| Slovenia             | Macedonia              | Morocco                          | Guinea                      |
| Andorra              | Mauritius              | Nicaragua                        | Ethiopia                    |
| Slovakia             | Brazil                 | Guatemala                        | Sierra Leone                |
| United Arab Emirates | Georgia                | Equatorial Guinea                | Central African Republic    |
| Malta                | Venezuela              | Cape Verde                       | Mali                        |
| Estonia              | Armenia                | India                            | Burkina Faso                |
| Cyprus               | Ecuador                | Timor-Leste                      | Liberia                     |
| Hungary              | Belize                 | Swaziland                        | Chad                        |
| Brunei Darussalam    | Colombia               | Lao People's Democratic Republic | Guinea-Bissau               |
| Qatar                | Jamaica                | Solomon Islands                  | Mozambique                  |
| Bahrain              | Tunisia                | Cambodia                         | Burundi                     |
| Portugal             | Jordan                 | Pakistan                         | Niger                       |
| Poland               | Turkey                 | Congo                            | Congo (Democratic Republic) |
| Barbados             | Algeria                | Sao Tome and Principe            | Zimbabwe                    |

# Towards Expanding Access to Health Care Services: A Policy Simulation of the Aquino Health Agenda in the Philippines

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フィリピン大統領に就任したアキノ 3 世は医療サービスを充実させるという「アキノ・ヘルス・アジェンダ」を公表した。その効果を検証する。

## Abstract

The Aquino Health Agenda was developed to address the problem of accessing health care services in the Philippines. To determine if these policies are really pro-poor and cost effective, the study simulated the effects of the Aquino Health Agenda policies in expanding access to health care services, specifically in increasing the number of live births attended by skilled health personnel in the Philippines in terms of equity and efficiency. The two Aquino Health Agenda policies that were simulated using Benefit Incidence Analysis (BIA) and Cost Effectiveness Analysis (CEA) are (1) upgrading health facilities under the Health Facilities Enhancement Program (HFEP) and (2) expanding health insurance coverage under the National Health Insurance Program (NHIP).

The results reveal that when it comes to equity, expanding health insurance coverage is more pro-poor than upgrading of health facilities in ARMM, Eastern Visayas, and Bicol Region. On the other hand, when it comes to efficiency or cost-effectiveness, expanding health insurance coverage is more cost effective in Eastern Visayas, while upgrading of health facilities is more cost effective in ARMM and Bicol Region. However, it is still highly recommended that both policy options be implemented by the Aquino administration in the said regions, since they complement each other.

**Keywords** Policy Simulation, Aquino Health Agenda

## Introduction

Human development is essential to every individual. It is the “process of enlarging people’s choices and building human capabilities, enabling them to live a long and healthy life, have access to knowledge, have a decent standard of living and participate in the life of their community and the decisions that affects their lives<sup>1)</sup>” as defined by the United Nations Development Programme (UNDP). Based on the given

definition of UNDP, one component of human development is health, which involves the longevity and nutrition needs of persons. This is the reason health organizations advocate for improvements on health services and for the achievement of health-related Millenium Development Goals (MDGs) all over the world. Access to health care services is one method that can lead to positive health outcomes and, eventually, to human development.

For some developing countries, however, access to health care services continues to be a problem, particularly among the poor and marginalized. In the Philippines, families from the poor income class, who are estimated to be 10.8 million<sup>2)</sup>, are the ones who mostly experience difficulty in gaining access to health care services. Based on the 2008 National Demographic and Health Survey (NDHS) of the National Statistics Office (NSO), the top five problems that Filipinos in the lowest quintile face in relation to accessing health care services are: (1) getting money for treatment (74.0% of respondents), (2) concern that no drugs are available (71.0%), (3) distance to health facility (57.8%), (4) having to take transport (56.1%) and (5) concern that no provider is available (54.0%). The majority of the problems mentioned indicate financial concerns of the poor, low accessibility of the poor to health care services, and infrastructure and equipment problems of health facilities. This signifies that problems in accessing health care services are multidimensional.

One reason the poor face these problems in accessing health care is the insufficiency of their average monthly income amounting to 3,460 pesos<sup>3)</sup> to cover for their basic needs. As this is the case, those of the lowest quintiles are often left to decide whether to seek medical treatment at the expense of missing meals, foregoing the education of their children, or facing financial ruin and destitution. Another reason is that the average travel time of the poorest quintile to the nearest health facility or provider is about 46.8 minutes, while that of the highest quintile is about 34.6 minutes.<sup>4)</sup> This difference of 12.2 minutes, or almost quarter of an hour, can mean a matter of life and death. This may result from geographical barriers causing long distances between the home of the poor and the health facility. Or there may be problems on transportation going to the health facility.

To improve access to health care services, the government should intervene to achieve efficiency and equity in the provision of health care services. They can tackle either the financial problems of the poor, the infrastructure and equipment problems of health facilities, or the low accessibility of the poor to health

facilities. With this, they can adopt multidimensional policies, which are complementary, in addressing problems related to access to health care. Some solutions for the problems the poor face in accessing health care services are expanding health insurance coverage and upgrading health facilities. Expanding health insurance coverage can protect the poor from financial risks. On the other hand, upgrading health facilities can lead to the expansion of health facilities to rural areas, where the majority of the poor are, and improvements in infrastructure and equipment, which are essential to the provision of quality health care.

In the Philippines, the Department of Health (DOH) has drafted different reforms throughout the years to achieve three primary health goals: (1) better health outcomes, (2) more responsive health system and (3) more equitable health financing. Among these reforms are the Primary Health Care approach in the late 1970s, the Generics Act in the late 1980s, the devolution of health services in the early 1990s, the National Health Insurance Act in 1995, and the Health Sector Reform Agenda (HSRA) in the late 1990s.<sup>5)</sup>

In 1999, the DOH drafted general policies for health through the Health Sector Reform Agenda (HSRA). It was only in 2005, however, when then-Secretary of the DOH Francisco T. Duque III, together with other members of the DOH, formulated the Formula One for Health (F1), a new implementation framework based on the HSRA. “F1 focuses on cost-effective interventions which can create the most impact, while maximizing limited health resources and generating buy-in from all potential partners.” Its objective is to concentrate on health care financing, health regulation, health service delivery and good governance.<sup>6)</sup>

This commitment of the Philippine government to health reform was solidified through a declaration of the newly elected President Benigno S. Aquino III during his inaugural address on June 30, 2010, to improve public health services within the next three years<sup>7)</sup> By December 16, 2010, the DOH released Administrative Order No. 2010-0036 (AO2010-0036), entitled “The

Aquino Health Agenda: Achieving Universal Health Care for All Filipinos,” which provided the initial steps to achieve universal health coverage.

The Aquino Health Agenda is considered to be a more focused implementation framework, based from the HSRA and F1. This first administrative order highlighted three main “strategic thrusts.” First, there is to be the rapid expansion in enrollment and benefit delivery of the National Health Insurance Program (NHIP) for the poorest families, who are part of the National Household Targeting System for Poverty Reduction (NHTS-PR) of the Department of Social Welfare and Development (DSWD). Second, there is to be accelerated upgrades for public health facilities in order to improve access to quality hospitals and health care facilities under the Health Facilities Enhancement Program (HFEP). Finally, in order to attain health-related MDGs, additional effort and resources are to be applied in localities with high concentrations of families who are unable to receive critical public health services.

The mentioned policies under the Aquino Health Agenda are crucial in the expansion of access to health care services in the Philippines, especially to those regions that have high percentage shares both in the total number of NHTS-PR families and in the total number of health facilities to be upgraded, such as Autonomous Region in Muslim Mindanao (ARMM), Eastern Visayas, and Bicol Region. The reality is that government resources for health are limited, yet the health care needs of people should be prioritized as a requirement. Thus, this study simulated whether government spending on the policies under the Aquino Health Agenda has positive effects in expanding access to health care services in terms of distribution of benefits or equity, and in terms of cost effectiveness or efficiency. This study simulated only the first two strategic thrusts of the Aquino Health Agenda, which are the upgrading of health facilities under the HFEP, and the expansion of health insurance coverage under the NHIP. Moreover, analysis was done for the following Philippine regions only: ARMM, Eastern Visayas, and Bicol Region.

## Methodology

Two empirical frameworks were used in this study to determine if government spending on the policies under the Aquino Health Agenda has positive effects in expanding access to health care services in ARMM, Eastern Visayas, and Bicol Region in terms of equity and in terms of efficiency. These frameworks were the Benefit Incidence Analysis (BIA) and the Cost Effectiveness Analysis (CEA). The BIA was used to measure the impact of the Aquino Health Agenda policies in expanding access to health care services in the said regions in terms of equity. On the other hand, the CEA was implemented to determine the impact of the said policies in expanding access to health care services in the mentioned regions in terms of efficiency.

The BIA is a tool used to measure the distributional incidence of benefits of public spending on a certain service for different groups of households (usually income and expenditure groups) in a certain nation or area.<sup>8)</sup> In this study, the BIA was implemented to determine if government spending on upgrading health facilities (HFEP) and on expanding health insurance coverage (NHIP) in ARMM, Eastern Visayas and Bicol Region are pro-poor, which signifies that the actual share of the poor in total government spending on the mentioned policies are higher than the ideal share. Ideal share refers to equal sharing of benefits among income groups. In addition, the BIA was implemented in this study to find out if poor households in the mentioned regions have higher shares in total government spending on the two health policies as compared to their total income.

Total government spending on the two Aquino Health Agenda policies, shares of the poorest income group in total subsidy, the suits index and the Gini coefficient, and subsidy rates<sup>9)</sup> were used to analyze the results of the BIA.

The suits index is the most common summary measure of the distribution of benefits (government spending) across income groups. On the other hand, the Gini coefficient is the most common summary measure of the distribution of income across income groups.



If the suits index is negative, this signifies that government spending on each of the Aquino Health Agenda policies is pro-poor or progressive in absolute terms. On the other hand, if the suits index is positive, this implies that government spending on each of the Aquino Health Agenda policies is not pro-poor or regressive in absolute terms. Moreover, if the suits index is algebraically less than the Gini coefficient, this means that the poorest group gets a larger share of benefits from government spending on the two Aquino Health Agenda policies than from their total income. This also signifies that government spending is progressive in relative terms. On the other hand, if the suits index is algebraically more than the Gini coefficient, this signifies that the poorest groups gets a smaller share of benefits from government spending on the two policies than from their income. This also implies that government spending is regressive in relative terms.

The CEA, on the other hand, is an empirical framework used to evaluate social intervention programs according to both their costs and their effects with regard to producing an expected outcome.<sup>10)</sup> It is essential in this study, since it can be a guide to government officials in determining which programs can be implemented with higher effectiveness at the same time, with the least cost.<sup>11)</sup>

In computing the cost-effectiveness ratio of HFEP and NHIP in this study, the costs of each program were divided by the effectiveness data, which is the measure for the outcome or effectiveness of a program. Number of live births attended by skilled health personnel was used as effectiveness data in this study, since the Philippines has a low probability of achieving the fifth millennium development goal of improving maternal health in 2015, and at the same time, most of the equipment under the HFEP are related to improving maternal health.

After computing for the cost effectiveness ratios of both HFEP and NHIP, the estimated ratios of both programs were compared with each other. For a program to be cost effective, it needs to have the least cost in its implementation, and at the same time,

greater effects in influencing expected outcomes. This implies that the program that will have a lower cost-effectiveness ratio will be the most cost effective or the most efficient program in expanding health care services, specifically in increasing the number of live births attended by skilled health personnel in ARMM, Eastern Visayas, and Bicol Region.

## Results and Discussion

Based on the benefit incidence results, expanding health insurance coverage is more pro-poor compared to upgrading health facilities in ARMM, Eastern Visayas, and Bicol Region. In terms of budget, the NHIP has a higher amount compared to the HFEP in all mentioned regions. In real terms, the NHIP has budgets equivalent to 663.280 million pesos, 598.573 million pesos and 626.515 million pesos for ARMM, Eastern Visayas and Bicol Region respectively. On the other hand, the HFEP has respective budgets equal to 23.070 million pesos, 75.037 million pesos and 57.811 million pesos only for ARMM, Eastern Visayas and Bicol Region.

On the other hand, in terms of percentage distribution of health subsidy, the shares of the first and the second income deciles have increased when the NHIP budget is added to the government spending on health in ARMM (from 23.46% to 47.55%), Eastern Visayas (from 21.48% to 40.08%), and Bicol Region (from 19.89% to 34.51%) in 2012, while they have remained the same when the HFEP budget is added. However, it is expected in the future that the shares of the poor income deciles in the total health subsidy will increase with the inclusion of the HFEP budget, since more health facilities, especially rural health units and barangay health stations, signify a greater probability that the poor will have greater access to health care services.

In terms of the suits index, government spending on total health in ARMM, Eastern Visayas, and Bicol Region in 2012 is progressive both in absolute and relative terms when both the HFEP and the NHIP budgets are added (as shown in Table 1). In addition, the

suits indices of total health spending when the NHIP budget is included are more negative compared to the suits indices of total health when the HFEP budget is added. This implies that the poor have higher shares in government spending on all health facilities including the NHIP budget in all selected regions in the Philippines in 2012 than in government spending on all health facilities including the HFEP budget.

In terms of subsidy rates, the inclusion of both HFEP and NHIP on the government spending on health in ARMM, Eastern Visayas, and Bicol Region in 2012 has contributed to the increase of the percentage share of health subsidy in covering the expenses of the poor, who are persons from the first and second income deciles (as shown in Tables 2, 3, and 4). However, NHIP has a higher contribution in the increase of the percentage share of health subsidy in covering the expenses of the poor than HFEP.

This is expected, given that NHIP is meant to benefit only the poor-income deciles, while HFEP benefits all income deciles. The reason for this is HFEP is

aimed to improve the supply side of the health sector, while NHIP is implemented to develop the demand side. It is easier for the government to target the poor in the demand side compared to the supply side, since it is clear that the poor are the ones who are in need of health insurance, while there are a lot of leakages or inefficiencies in upgrading of health facilities. Leakages in the supply side imply that there is no assurance that the investments on the upgrading of health facilities will target the real needs of the poor, since the rich also have access to public health facilities.

Because of this, the effect of NHIP on benefitting the poor is greater compared to that of HFEP. Thus, government spending on expanding health insurance coverage is more beneficial to the poor than government spending on upgrading health facilities in expanding access to health care services, specifically in increasing the number of live births attended by skilled health personnel.

On the other hand, based on the results of the cost effectiveness analysis, ARMM has HFEP or upgrad-

**Table 1 Suits Indices of Government Spending on Health**

| Region             | Suits Index<br>(Without<br>Policy<br>Intervention) | Suits Index<br>(HFEP) | Suits Index<br>(NHIP) | Gini<br>Coefficient |
|--------------------|--|-----------------------|-----------------------|---------------------|
| ARMM               | -0.445013  | -0.445013             | -0.740006             | 0.294824            |
| Eastern<br>Visayas | -0.335455  | -0.335455             | -0.592664             | 0.484084            |
| Bicol<br>Region    | -0.285559  | -0.285559             | -0.511455             | 0.416391            |

Source: National Statistics Office (NSO) and Author's computations

**Table 2 Subsidy Rates of Government Hospitals on the First Income Decile**

| Regions            | Without Policy<br>Intervention | With HFEP<br>Policy | With NHIP<br>Policy |
|--------------------|--------------------------------|---------------------|---------------------|
| ARMM               | 0.3001%                        | 0.3334%             | 3.3342%             |
| Eastern<br>Visayas | 1.2082%                        | 1.3559%             | 4.9004%             |
| Bicol<br>Region    | 1.4267%                        | 1.5378%             | 4.3656%             |

Source: NSO and author's computations

**Table 3 Subsidy Rates of Rural Health Units on the First Income Decile**

| Regions            | Without Policy<br>Intervention | With HFEP<br>Policy | With NHIP<br>Policy |
|--------------------|--------------------------------|---------------------|---------------------|
| ARMM               | 0.5772%                        | 0.6379%             | 6.4122%             |
| Eastern<br>Visayas | 1.7001%                        | 1.9736%             | 6.8956%             |
| Bicol<br>Region    | 1.2718%                        | 1.3724%             | 3.8914%             |

Source: NSO and author's computations

**Table 4 Subsidy Rates of Barangay Health Stations on the First Income Decile**

| Regions            | Without Policy<br>Intervention | With HFEP<br>Policy | With NHIP<br>Policy |
|--------------------|--------------------------------|---------------------|---------------------|
| ARMM               | 0.3528%                        | 0.4585%             | 3.9195%             |
| Eastern<br>Visayas | 0.7776%                        | 0.9170%             | 3.1538%             |
| Bicol<br>Region    | 0.9581%                        | 0.9993%             | 2.9315%             |

Source: NSO and author's computations

ing health facilities more cost effective than NHIP, since HFEP in ARMM has a cost effectiveness ratio of 340,638.570 pesos per live birth attended by skilled health personnel, while NHIP in the said region has a cost effectiveness ratio of 452,281.812 pesos per live birth attended by skilled health personnel. This is due to the fact that the number of live births attended by skilled health personnel as a result of HFEP is higher than that of NHIP. This implies that less cost is incurred in HFEP in increasing the number of live births attended by skilled health personnel in ARMM as compared to NHIP.

On the other hand, in Eastern Visayas, NHIP or expanding health insurance coverage is the most cost effective, since NHIP in Eastern Visayas has a cost effectiveness ratio of 32,903.82 pesos per live birth attended by skilled health personnel, while HFEP in the said region has a cost effectiveness ratio of 67,923.95 pesos per live birth attended by skilled health personnel. This is due to the fact that Eastern Visayas has the highest share in the total number of health facilities under HFEP in the Philippines, and thus, the said region has a high cost of upgrading health facilities. Because of this, HFEP costs in Eastern Visayas will be higher compared to the NHIP costs. This also implies that higher cost is incurred in HFEP in increasing the number of live births attended by skilled health personnel in Eastern Visayas as compared to NHIP.

In Bicol Region, HFEP or upgrading health facilities is the most cost effective, since HFEP in Bicol Region has a cost effectiveness ratio of 20,056.66 pesos per live birth attended by skilled health personnel, while NHIP in the said region has a cost effectiveness ratio of 24,979.86 pesos per live birth attended by skilled health personnel. This is due to the fact that NHIP costs are higher in Bicol Region as compared to HFEP costs. This implies that lower cost is incurred in HFEP in increasing the number of live births attended by skilled health personnel in Bicol Region as compared to NHIP.

## Conclusion

Not everyone, especially the poor, has easy access to health care products and services. Thus, government intervenes in health care spending in different ways to achieve human development for all persons, and equity and efficiency in the health sector. At present, the Philippine government intervenes in the health care sector through the implementation of the Aquino Health Agenda with its three strategic thrusts of upgrading health facilities, expanding health insurance coverage and attaining health-related Millenium Development Goals (MDGs) in 2015.

At the national level, it is expected that expanding health insurance coverage is more pro-poor and more cost effective than upgrading of health facilities. Expanding health insurance coverage is more pro-poor, since targeting the poor on the demand side is easier as compared to doing so on the supply side. It is also more cost-effective, since upgrading of health facilities is more costly when it comes to implementation as compared to expanding health insurance coverage. This is also triggered by a lot of investments on infrastructure, equipment, and sustained provision of quality health care services in the upgrading of health facilities. When it comes to pro-poorness, results of the regional simulations reflect that of the national level. This signifies that in all selected regions in the Philippines, expanding health insurance coverage is more pro-poor compared to upgrading of health facilities. However, when it comes to cost effectiveness or efficiency, results vary across regions, and results in some regions do not reflect what is expected at the national level. This is mainly caused by the following factors: (1) number of health facilities under HFEP per region, (2) number of NHTS-PR families per region, and (3) health outcomes per region, specifically the number of live births attended by skilled health personnel per region. However, other factors which are beyond the scope of this study might affect the differences in the cost effectiveness results of the regions, like institutional and political factors, socio-economic factors, etc. When it comes to pro-poorness, expanding health insurance coverage is more pro-poor than the upgrad-

ing of health facilities in ARMM, Eastern Visayas, and Bicol Region. This implies that if the government aims to achieve equity in expanding access to health care services, specifically in increasing the number of live births attended by skilled health personnel in all selected regions in the Philippines, then they should concentrate on expanding health insurance coverage under NHIP. However, the effort to be placed in the implementation of NHIP might differ among the selected regions in the Philippines, since NHIP might be more pro-poor in some regions compared than in other regions. It depends on the circumstances of each region and on the total poor and vulnerable covered by health insurance. For example, based on the results of benefit incidence analysis, the poor in ARMM and Eastern Visayas are the ones who greatly benefitted from NHIP as compared to Bicol Region. This means that more effort in implementing NHIP should be done in Bicol Region.

On the other hand, when it comes to efficiency or cost-effectiveness, expanding health insurance coverage is more cost effective than upgrading of health facilities in Eastern Visayas, while upgrading of health facilities is more cost effective than expanding health insurance coverage in ARMM and Bicol Region. This implies that if the government aims to achieve efficiency in increasing the number of live births attended by skilled health personnel in Eastern Visayas, then they should focus on expanding health insurance coverage under NHIP. On the other hand, if the government aims to attain efficiency in achieving the policy goal in ARMM and Bicol Region, then they should focus on upgrading health facilities.

Conflicts in implementation, however, might occur when the government wants to achieve both equity and efficiency in expanding access to health care services in some regions. For example, in ARMM and Bicol Region, expanding health insurance coverage is more pro-poor or equitable than upgrading of health facilities in expanding access to health care services, while upgrading of health facilities is more cost-effective or efficient than expanding health insurance coverage. It might be difficult to

implement both policies at the same time, since this may lead to inefficiencies. Implementing both policies simultaneously in a specific region might lead to inefficiencies, since the government might not be concentrating on the essential need of the region, which might be more on upgrading of health facilities than on expanding health insurance coverage and vice versa. In this case, the government still needs to determine the specific circumstances of each region, especially in terms of health conditions, so as to determine which of the two policies should be prioritized by the government in the regions that have conflicting results like ARMM and Bicol Region.

Despite the possible occurrence of inefficiencies, it is still highly recommended that both policy options be implemented by the Aquino administration in the said regions, since they are complementary with each other. Also, they address different problems in accessing health care services or in increasing the number of live births attended by skilled health personnel. Upgrading health facilities is beneficial in addressing the problem of low accessibility to health facilities of the people, especially of the poor and the physical problems of health facilities. On the other hand, expanding health insurance coverage is essential in addressing the financial problems of the poor in accessing health care services. In addition, the two mentioned policies are complementary, since upgrading health facilities addresses the supply side of the health sector, while expanding health insurance coverage addresses the demand side. Thus, there is not much impact on the achievement of the policy goal, if only one of the two policy options will be implemented. If upgrading health facilities is the only policy option to be implemented, the poor still face monetary issues, such as paying for the fare going to the health facility and paying for the expenses on health consultations, medicines and other medical expenses. Conversely, if expansion of health insurance coverage is the only policy option to be implemented, the poor can receive treatment, since health insurance can cover for the medical expense, but if there is lack of infrastructure, equip-



ment, medicine stocks and staff within health facilities, then they still cannot have access to health care services. Thus, if both policy options are implemented, then great expansion of access to health care services, specifically, a high number of live births attended by skilled health personnel can be achieved in ARMM, Eastern Visayas and Bicol Region. However, in implementing both policies, the government should take note the specific circumstances of each region, so that they can truly determine what policy they should give more bearing in each of the regions.

## Recommendations

Based on the findings and conclusions, the following recommendations are hereby presented:

The government can focus on upgrading health facilities in ARMM and Bicol Region, if their aim is to achieve cost efficiency only in obtaining the policy goal, while they can concentrate on expanding health insurance coverage, if their objective is to attain equity only. On the other hand, they can fully focus on expanding health insurance coverage in Eastern Visayas to achieve both cost efficiency and equity in increasing the number of live births attended by skilled health personnel. The difference in the results of Benefit Incidence Analysis and Cost Effectiveness Analysis among the three regions may be attributed to factors like poverty conditions, geographic location of health facilities, social status of the users of health facilities, number of health facilities, allotted regional government spending, allotted regional HFEP and NHIP budget, total income and expenditure, health conditions, etc. This signifies that the national government should take into consideration the circumstances of the different regions in the Philippines in implementing health policies, so that they can determine what policy they should focus on within a certain region. One way they can do this is through consultations with the members of the health care sector, such as doctors, nurses, midwives, medical technologists, etc. The reason for this is that members of the health care sector are the front liners in providing health care

products and services, and thus, they are familiar with the existing problems in accessing health care products and services in different areas.

In ARMM, the poorest of the poor or the first income decile are the ones who mostly access rural health units and barangay health stations, but not government hospitals without NHIP. Because of this, the government should make sure that the poor will receive health insurance, so that they can afford to pay for complex services in government hospitals. With this, the share of the poorest income decile in government spending on government hospitals will increase. Also, HFEP is more cost effective than NHIP in ARMM, based on the results of cost effectiveness analysis. To further strengthen the cost effectiveness of HFEP in increasing the number of live births attended by skilled health personnel or in increasing the number of live births in health facilities, public health facilities should be located in the poor areas like the Conditional Cash Transfer (CCT) sites, which are selected by the Department of Social Welfare and Development (DSWD).

In Eastern Visayas, the poorest of the poor or the first income decile are the ones who mostly access rural health units and barangay health stations, but not government hospitals without NHIP. Also, NHIP is more cost effective than HFEP in Eastern Visayas, based on the results of cost effectiveness analysis. Because of this, the government should make sure that the poor will receive health insurance, so that the poor can afford to pay for complex services in government hospitals. With this, the share of the poorest income decile in government spending on government hospitals will increase. Also, this will improve the cost effectiveness of NHIP in the said region.

In Bicol Region, the first income decile greatly benefits from all public health facilities with or without HFEP and NHIP. However, if the Aquino Health Agenda aims to achieve universal health coverage, then both HFEP and NHIP should still be implemented to catalyze the attainment of the said goal.

However, to really increase the probability of

attaining the policy goal, the government should implement both policy options of upgrading health facilities and of expanding health insurance coverage to all regions in the Philippines. If they really want to increase the number of live births attended by skilled health personnel, they have to address the top three problems of accessing health care: financial problems of the poor, geographical barriers and physical problems of health facilities. Also, there should be an alignment in the implementation of the two mentioned policies by focusing on sites, where majority of the poor are, like the Conditional Cash Transfer (CCT) sites as determined by the Department of Social Welfare and Development (DSWD). However, the government should still consider the circumstances of each region, since there are regions, especially the highly urbanized ones that have enough health facilities, but still cannot access health facilities due to high out-of-pocket spending. Because of this, the government should concentrate more on expanding health insurance coverage in these regions than on upgrading of health facilities. On the other hand, regions that are mostly rural have problems with shortages of health facilities. Thus, the government can focus on upgrading health facilities in the said regions rather than on expanding health insurance coverage.

In addition, to further strengthen the implementation of the two mentioned policy options, the government can implement methods that can improve private sector participation in the health care sector. Private sector participation can improve efficiency and equity in the health care sector by building more health facilities that can cater to those who belong to the middle and rich income deciles, since they can afford to pay for health care products and services. Through this, public health facilities can focus on providing services to the poor deciles. In addition, private sector participation can spur competition among health facilities, and through competition, all health facilities, both public and private, will be pressured to improve the quality of health care services that they provide. Some ways that can strengthen

private sector participation are through public-private partnerships in the construction and upgrading of public health facilities, through increased capitation funds provided by the government to private health facilities from health insurance, and through the construction of more public health facilities in rural areas. The increased capitation funds from health insurance will incentivize the private sector to provide quality health care services. On the other hand, the construction of more public health facilities in rural areas can induce investments from the private sector, such as construction of more private health facilities and drug stores.

The government can also review the governance structure of the Department of Health in implementing health policies. The implementation of some health policies, like the upgrading of health facilities, is currently devolved to the local government units (LGUs). This might induce problems in the implementation of health policies, since some LGUs might lack the absorptive capacity to implement health policies.

For the members of the health sector, they should provide inputs to the government as regards problems in the health sector and the possible solutions in addressing these problems, so that health policies can be directed in attaining the real policy goals in the sector.

For the academe and economists, they should employ research to determine the possible outcomes of the government's health policies. The results of their research can also serve as an aid to the government in drafting health policies. This is one reason why the academe and the government should collaborate with each other. The government can provide data and other information regarding their policies to the academe and economists, while the academe and economists do the policy simulations.

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# The Plight of the Informal Waste Sector (IWS) in the Philippines

ダンプサイトに持ち込まれる大量の都市廃棄物。その劣悪な環境の中でゴミを拾い、生計を立てている人たちがいる。彼らを窮状から救うのが急務だ。

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Philippine Association of Japanese Government Scholars (PHILAJAMES) FY 2013-2014  
Solid Waste Management Association of the Philippines (FY 2013-2016)

## Abstract

Solid waste is an urban phenomenon which has created a new type of employment opportunities that has attracted the rural migrants who come to the city seeking other means of livelihood. Waste-picking offers income opportunities that can be easily done without the need for documents and employers. Unknown to most, this group of workers have become vital to the recovery of recyclables. All over the world, the waste-pickers survive dealing with waste yet expose their very lives to toxics and diseases which are threats to their health.

In the Philippines, they are responsible for removing tons of recyclables from dumpsites. But there is little research on who they are, how they live, and what the government does to help improve their lives. The way they live and survive raises questions about humane treatment of this group of people whose activities contribute to solving the urban problems in solid waste management.

This study presents the profile of waste-pickers as well as local situations and conditions of dumpsites in selected municipalities in the Philippines. The study aims to present some aspects in the lives of waste-pickers and the issues they face such as the threat of losing their jobs in the event of dumpsite closures, as well as the opportunities that they can prevail if they are given proper training. The challenge right now is how to upgrade the status of these waste-pickers to certain level of recognition and improve their livelihood. This paper endeavors to present these scenarios.

**Keywords** waste pickers, solid waste management, informal waste sector

## Introduction

Solid waste here shall refer to those materials that have been discarded from households, commercial establishments, institutions, industries, as well as street sweepings, yard waste and agricultural wastes, which are non-toxic and non-hazardous (RA 9003). These are the common solid wastes which are col-

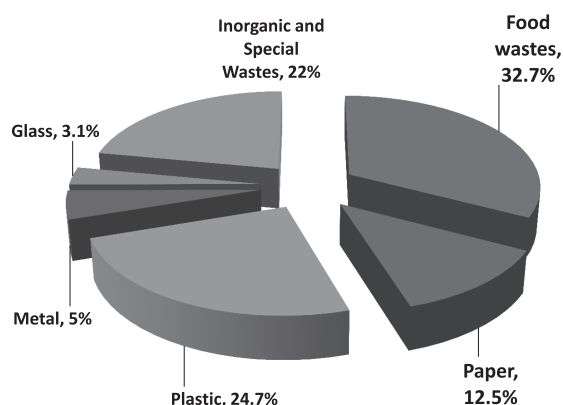
lected and disposed of as municipal solid waste (MSW) in open dumpsites and engineered sanitary landfills. They are often the result of urbanization of modern societies. Most solid wastes are from manufactured goods, which come in the form of packaging as well as discards from manufacture of packaging products. The general municipal solid



waste composition in the Philippines shows that a huge percentage of these wastes are made up of highly recyclable materials such as plastic, paper, metal and glass (AIT/UNEP RRCAP, 2010) as shown in Fig. 1 below.

These recyclable wastes are often discarded and mixed with other municipal solid waste, which are then dumped in final disposal facilities. This manner of disposal has given opportunities for a new livelihood to a select group of people who do not mind gleaning the recyclables under abject conditions. These people are collectively called the IWS or the informal waste sector, whether they are collecting from dump trucks, households, street corners where garbage are piled, trash bins and the final disposal facilities of cities and municipalities. They are often referred to as waste pickers or, in some places, scavengers. Local terms for them vary depending on the local language being used.

Unbeknownst to many, this group of workers has become vital to the recovery of recyclables. All over the world, waste pickers survive dealing with waste yet expose their very lives to toxic surroundings and diseases which are threats to their health. They often suffer from injuries as a result of their occupation, such as bruises from shards of broken glass, metals, and sharp needles that have been discarded from clinics. Some of them even get bitten by snakes and rats.



**Fig. 1 Municipal solid waste composition in the Philippines (AIT/UNEP RRCAP, 2010)**

They live near the dumps in order to be close to their means of livelihood so that they do not have to spend for transportation. Often, they take with them their families, as a result of which children are exposed to the contaminated surroundings they live in and where conditions are most abject. They wear no protective clothing when they work. They work in all types of weather in order to survive so that sometimes workers get caught in trash slides and are buried alive.

Studies have been conducted in many parts of the world, aiming to help this almost forgotten sector of the society in order to improve their lives. Funding agencies such as JICA and the Japan Social Development Fund (JSDF) through the World Bank/IBRD have been allotting funds to help this marginalized sector have a better status in the society.

In the Philippines, they are responsible for removing tons of recyclables from dumpsites. But there has not been much research on who they are, how they live, and what the government does to help improve their lives. The way they live and survive raises questions about humane treatment of this group of people whose activities contribute to solving the urban problems in solid waste management. This is why in June 2012, the JSDF, through the World Bank, gave a grant for the provision of Social Inclusion and Alternative Livelihoods of the IWS. This is being implemented by the WB through the Solid Waste Management Association of the Philippines (SWAPP) in order to better understand the IWS and help them achieve a better status by helping them through the social inclusion aspect and providing them with better livelihood opportunities. This project is seen to benefit more than 5,000 waste pickers in 10 chosen sites around the Philippines.

## **Solid Waste Situation in the Philippines**

According to the National Solid Waste Management Commission (NSWMC) of the Philippines, the rate of garbage generation in the country is approximately 30,000 tons daily. Metro Manila, the National

Capital Region, generates about 7,000 to 8,000 tons per day. This amount of garbage costs a lot of money for collection and disposal. In 2004, with a lower generation rate, an annual cost of PhP3.54 billion or roughly PhP1,450/ton of garbage was spent (ADB, 2004). A World Bank study has projected the Municipal Solid Waste (MSW) generation for the Philippines in 2025 to be 0.9 kg per capita per day from a total population of 115,878,000 and an urban population of 86,418,000. The projection for the daily MSW generation for 2025 was 77,776 tonnes (WB 2013). Currently, the waste generation rate is 0.3-0.5 kg/day in rural areas and 0.7 kg/day in Metro Manila (NSWMC 2013).

Thirteen years after the Republic Act 9003 (Ecological Solid Waste Management Act 2000) was signed into law, implementation and enforcement remains at a minimum. The law mandates waste minimization and waste segregation at source, following the 3Rs of solid waste management (Reduce, Reuse, Recycle). The residual waste must be disposed of in the final disposal facility, with the engineered sanitary landfill facility (ESLF) as the primary option for final disposal of solid waste. Out of 1,610 cities and municipalities only 55 so far has an ESLF, 61 are still constructing their ESLF, only 565 have solid waste management plan, 331 have controlled dumpsites and 581 still have open dumpsites (NSWMC 2014 data).

Many local government units (LGUs) are still operating open dumpsites and collecting waste without segregation of recyclables. This means that, as of the moment, these LGUs are still collecting and disposing mixed waste in their open or controlled dumping facility, hence the IWS are still actively working in these disposal sites. Also, with more development continuing, such as the construction of housing developments and malls in highly urbanizing cities, more farms are being converted into a different land use such that more farmers or farm tenants are losing their jobs and many are resorting to waste picking as an easier form of livelihoods in terms of availability.

These open dumpsites or even the controlled dumpsites have various negative impacts on the environment and the health of the people. Untreated leachate from these dumpsites contaminates the soil as well as the groundwater and the surrounding bodies of water. Methane is formed during anaerobic decomposition. It is a greenhouse gas that is twenty-five times more potent than carbon dioxide itself, although there is far less of it in the atmosphere (NOAA, 2008). Other forms of toxic chemicals are emitted from the open dumpsites contaminating the air we breathe. These come from the degrading garbage that are made from inorganic and organic materials. Toxic materials from open dumpsites often impact the health of waste pickers. There are 22 human diseases identified by the US Public Health Service, which are linked to improper solid waste management (WB, 1999). Research conducted by Guzman and Guzman (2000) have shown that poor health is related to poor sanitation, particularly environmental sanitation and is directly linked to improper disposal of solid waste. (Fig. 2)

There are other negative issues that are directly linked to improperly managed solid waste. For example, the excessive overflow of water from drainage canals during the rainy season, which causes flash flooding, is blamed mostly on solid waste that has



**Fig. 2 Open dumpsite in one of the cities in the Philippines (2012 photo).**

been improperly dumped and has ended up clogging storm drainage canals. Also, excessive dumping of garbage causing the pile up in dumpsites causes trash slides and threatens the lives and properties in the surrounding areas. It also threatens the IWS working in dumpsites under such conditions.

## Profile of the IWS

The IWS belongs to the lowest rung of the social ladder. They are the most invisible among all the sectors dealing with solid waste (Venkateswaran, 1994). Around the world, an estimated 15 million people are making a living out of sorting, collecting and selling recyclable materials that have been discarded by the rest of the population (Inclusive cities 2012). They are perceived as the poorest of the poor and marginal to mainstream economy and society (Medina, 2005). Although in general they are known as scavengers, they are called by many other names in English such as: rag pickers, recyclers, salvager, waste collector and waste pickers. In Latin America, in Spanish they are called *cartonero*, *clasificador*, *minador*, and *reciclador* and *catador de materiais reciclaveis*. This term has been beset with derogatory meanings such that the term “waste pickers” was used to replace “scavengers” at the “First World Conference of Waste Pickers 2008” (wiego.org). The IWS are usually found in poor or developing countries where poverty is a huge social problem.

In most parts of the Philippines, the waste pickers are called by names such as “mangangalakal,” “mangangalahig,” “mambabasura,” and “maykayay.” In Cavite City, the migrant waste pickers mostly come from the poorer regions of the country (Samar, Leyte, Bicol), some parts of Luzon, Visayas and Mindanao, and have lost homes due to floods, typhoons or left home due to other problems. In Pili (Camarines Sur) and Butuan (Caraga Region), some waste pickers are part-time farmers who spend their time picking waste during periods when plants are waiting to be harvested or who have abandoned farming in favour of waste picking.

The waste pickers are seen either buying recyclable waste from households or collecting waste from households at a price dictated by the source. They can also be seen gleaning from illegal dumpsites, from trash bins and prowling the streets or parks for any recyclable waste material that is littering such places. They form the base chain of the recycling industry although this is rarely recognized.

Although most waste pickers have very little or no education, many waste pickers from the ten projects sites of the JSDF WB project being implemented by the Solid Waste Management Association of the Philippines (SWAPP) were found to have finished proper schooling. Some have graduated from elementary, many have graduated with high school diploma and some even have gone through some college education but dropped out in the middle of it. Others have finished college education altogether. For example, in Butuan City (Caraga Region, Mindanao), profiling of waste pickers yielded 1 college graduate, 47 undergraduates and 5 vocational graduates. In other selected sites such as Naga City, in Camarines Sur (Region 5), for example, there are 22 high school graduates, 4 college undergraduates and 1 college graduate. Similarly, in General Santos City (Mindanao, Southern Philippines), there are 46 high school graduates, 16 college undergraduates, and 3 college graduates working as waste pickers. Surprisingly, many of the waste pickers in the 10 study sites were found to have higher level of education than expected in this type of livelihood (Table 1). No explanation was given, however, as to why these people chose to work as informal waste pickers instead of working in the formal labour force. One reason could be that waste picking is a lucrative livelihood and could give instant cash in just a few hours of gleaning recyclable waste.

The level of education among the informal waste pickers from all the study sites of SWAPP including the informal recycling sector is summarized in Table 2.

The data in Table 2 indicates that there are people who, even though they have obtained a higher level of education and literacy, still prefer the seemingly

**Table 1 Level of Education of waste pickers in selected sites (data from results of survey conducted by SWAPP through the JSDF WB Project (2013).**

| Level of Education            | Number |
|-------------------------------|--------|
| Butuan City                   |        |
| High school graduate          | 101    |
| College undergraduate         | 47     |
| College graduate              | 1      |
| Cabanatuan City (Nueva Ecija) |        |
| Vocational graduate           | 12     |
| College undergraduate         | 16     |
| General Santos City           |        |
| Vocational graduate           | 1      |
| High school graduate          | 74     |
| College undergraduate         | 16     |
| College graduate              | 3      |
| Legazpi City (Region 5)       |        |
| High school graduate          | 46     |
| College undergraduate         | 13     |
| College graduate              | 10     |
| Naga City (Region 5)          |        |
| High school graduate          | 22     |
| College undergraduate         | 4      |
| College graduate              | 1      |
| Polangui (Albay, Region 5)    |        |
| High school graduate          | 26     |
| Vocational graduate           | 2      |
| College undergraduate         | 9      |
| Tabaco City (Albay, Region 5) |        |
| High school graduate          | 15     |
| College undergraduate         | 3      |

**Table 2 Summary of the level of education of IWS in SWAPP study sites including the informal recycling sector (data from results of survey conducted by SWAPP through the JSDF WB Project (2013).**

| Level of Education       | Number |
|--------------------------|--------|
| None                     | 60     |
| Elem Undergraduate       | 1358   |
| Elem graduate            | 575    |
| HS undergraduate         | 1316   |
| HS graduate              | 453    |
| Vocational undergraduate | 135    |
| Vocational graduate      | 28     |
| College undergraduate    | 251    |
| College graduate         | 21     |
| No data                  | 336    |

lucrative nature of picking recyclable waste because it earns them quick money on a daily basis.

The IWS also have diverse backgrounds in terms of religion and ethnic groups. For example, in General Santos City, Southern Mindanao, Philippines, many waste pickers come from the Indigenous People's tribes such as T'boli and B'laan. These ethnic tribes are protected under the Indigenous People's Act.

Most of them come from the rural areas although some of them have grown up in the cities. In Cagayan de Oro City, many waste pickers come from the neighbouring towns. They have been attracted to the lure of city life, looking for better opportunities but ended up with no means to acquire better jobs, so that working in the dumps is their only choice of livelihood. Waste picking does not require documents in order to be employed and it is the fastest way to earn money. Although the conditions are abject, some people gravitate towards waste picking because it provides an easy form of livelihood. These men, women and children (some are even below 14 years old) all suffer from marginalization and live in informal settlements, often excluded from social services, often neglected by their own governments.

Cities and municipalities condone waste picking because it provides some employment to poor migrants and informal settlers in their constituent areas. Also, since the LGUs find it difficult to enforce waste separation at source, they depend on the IWS to do the separation without cost to the LGU. Although most waste pickers earn an average of Php120.00 per day many of them earn lower than Php100.00 to about Php1,000.00/day on lucky days. From time to time, some waste pickers would even get luckier, finding treasures among the waste, such as gold and jewelry, discarded by mistake by their owners. Again, some would even find a huge amount of money wrap in plastic bags, perhaps also discarded by mistake. Although this does not happen often, such stories of finding real treasures are what lure most people to waste picking as an attractive occupation. (Fig. 3)





**Fig. 3 Waste pickers in one of the dumpsites in the Philippines.**

## **Waste picking Livelihood: From Rural to Urban**

As previously mentioned, many of these waste pickers come from rural areas looking for livelihood opportunities in the cities. However, since most of them come from farming communities, they lack the necessary skills required for jobs in the city. Not only that, many of them lack documentation, which are requirements for gainful employment. Lacking skills and without the necessary documents, they are thus eliminated from the formal labor force and resort to informal jobs. Waste picking is the easiest way to gain work in the city, and does not require skill or schooling. It only requires a tough stomach to be able to handle malodorous and dirty trash. Waste picking is thus, a more lucrative choice as it yields immediate profit, sometimes more than other formal menial jobs. Although they have no formal benefits such as social security and health care programs from the government, they own their time and can work on the hours that they desire or go off whenever they want.

## **Types of Waste Pickers**

All over the world there are different types of waste pickers. In the Philippines, the Informal Waste Sec-

tor (IWS) is classified under various categories:

The *itinerant waste buyers* are those waste collectors who go from house to house to buy recyclable waste.

The *garbage truck waste pickers* are those who recover recyclables from the dump truck while collecting garbage from house to house.

The *street waste pickers* are those who prowl the streets to look for discarded materials littering these places.

The *informal waste collectors* are those who collect garbage from the source and are paid depending on the whim of the person who gives out the garbage.

The *dumpsite and street waste pickers* are those who pick waste from the dumpsites and sometimes from the streets.

*Dumpsite waste pickers* and *informal waste collectors* are those who sometimes glean waste from the dumpsites but double as waste collectors from household or commercial establishments using their own pushcarts.

*Dumpsite waste pickers* are those who recover recyclable waste at the disposal facility only.

The photo below shows an informal waste collector disposing waste at the Angeles City Transfer Station. (Fig. 4)



**Fig. 4 Informal waste collector dumping at the Angeles City Transfer Station**

## Global Perspectives on the Common Aspects of Waste Pickers

According to Women in Informal Employment Globalizing and Organizing (WIEGO), the following are the common aspects of waste pickers:

1. Although waste picking appear to be chaotic, it is actually very organized.
2. The number of waste pickers fluctuates depending on the economic conditions and urban process.
3. Waste pickers are often not part of public solid waste management systems; they are socially invisible and seldom reported in official statistics (hence, informal).
4. Waste picking is easily learned and usually does not require literacy. However, when working in a collective endeavour, some activities (for example, administrative tasks) do require literacy.
5. Non-organized waste pickers are often recruited by middlemen.
6. Workers are often subjected to social stigma, poor working conditions, and oftentimes harassed.
7. Waste picking is a family enterprise. It offers flexible working hours and a high level of adaptivity.
8. In some cities, most waste pickers are migrants, while in others, they are from the marginalized sector and are excluded from global economic processes.

## Issues of Waste Pickers in the Philippines

Like other sectors in the labour force, the waste pickers also have to contend with a number of issues related to their lives and livelihood. They are often migrants from rural areas who find work in deplorable working conditions, such as dumpsites. They are exposed to toxic surroundings (where carbon dioxide, methane and other toxic gases are released in huge quantities). They cannot afford decent housing so they live in shanties, in cemeteries, along the coast or near the dumpsites. They lack access to decent sources of water and to sanitation. There is often no garbage collection in their communities so

they dump garbage anywhere or bring it to dumpsites themselves (or burn their trash).

In their work area, they do not have any means of obtaining protective clothing and shoes to wear when doing their recovery and salvaging activity. The weaker ones suffer from chronic coughs due to inhalation of smoke and other toxic fumes but are unable to meet their medical expenses due to lack of benefits from health care insurance.

## Livelihood Opportunities: Mainstreaming the IWS

In order to provide the IWS with better opportunities and improve their livelihood, they must be provided with the right tools for social inclusion and empower them to be able to find better jobs away from garbage dumps. The SWAPP-administered JSDF WB project is helping them by conducting training to provide them with various social and trade skills for gainful employment so that they will have decent jobs once the dumpsites are closed upon full implementation of RA 9003. As such, they are being provided with opportunities to become involved in formal solid waste management services, skills training and education, organizing them into cooperatives or associations for better collective business arrangements, partnering them with existing companies or with LGUs.

In other places (not part of SWAPP Project), they are being given assistance from the government through loans and other micro-financing schemes for alternative livelihood management.

## Conclusions

Open dumpsites are not only breeding grounds for vector organisms; they are also breeding grounds of waste pickers. Unsegregated waste being disposed in these facilities attracts waste pickers. As long as recyclable wastes are disposed in the dumpsites and as long as dumpsites are open, the IWS will remain picking recyclables since selling recyclables is the easiest form of livelihood.

Rural migrants who have no skills and have little education find waste picking the easiest choice for livelihood. However, waste pickers can improve their livelihood if given opportunity and proper training by the government.

Developing programs for integration of waste pickers into the mainstream is possible. Training and capacity building can help equip them with the proper tools to handle their own micro-enterprise or become gainfully employed in other businesses. Micro-financing for livelihood opportunities can be attained through cooperative business enterprising. Improvement of livelihood of waste pickers can contribute to economic growth. Also, better waste management can be achieved through employing skilled SWM workers, the IWS.

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# Harmonizing Diverse Perspectives on Environmental Issues Toward A Unified Mitigation and Remediation Program

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環境が悪化し始めたとき、その緩和と改善のためには草の根運動がイニシアチブを取り、それを国家へ、より広い社会へと展開してゆく必要がある。

## Abstract

This study examines local environmental issues and evaluates their relevance to regional, national and global concerns with the hope of proposing remediation and mitigation initiatives that could generate a ripple effect toward an equitable solution. An inventory of pressing environmental concerns as perceived by various social sectors is enumerated and explored.

From the initial findings, an instrument that classifies these concerns into broader regional, national and global issues was designed. Preliminary data were shortlisted and thematically organized, then ranked based on perceived severity and impact. Levels of awareness, importance and urgency of providing solutions to the identified issues were also determined. The shortlisted issues were presented to selected respondents and were clustered into five pressing regional and national environmental issues. These were then linked to the global issues stipulated on the United Nation's Report on the "Emerging Issues on our Global Environment" (UNEP Year Book 2013).

The resulting profile served as basis for the proposed mitigation and remediation program. The best practices obtained from the survey were considered. A consolidated program was drafted and evaluated for technological and legal viability.

**Keywords** Diversity, Global implications, Mitigation, Remediation, Environmental issues

## Introduction

One of the unifying endeavors shared by many countries is the battle against environmental degradation. Now more than ever, Asian communities, governments, businesses, and broader civil society are voicing their concerns regarding the effects of degraded ecological systems and the negative impacts of climate change. Economic growth tends to obscure the challenges that affect the region such as corruption, poverty, discrimination, other social conflicts and environmental threats. If not urgently

addressed, these challenges could threaten Asia's development and economic growth (Asia Foundation, 2014).

The most significant step in working toward on equitable solution is an accurate recognition and identification of the problem. In an environmental study, robustness of data is affected by individual perspective and ability to identify consistent, updated trends in local and eventually global environments. Despite rapid advances in communication technology, social media and other remote sensing facilities,



serious data gaps remain. Even in highly isolated ecological units, diverse patterns of interaction and roles can be observed. In a community of human population, it is not surprising that perspectives differ from one individual to another, or between and among groups. In addition to larger and better data on changes in the environment, clear and measurable targets are needed in order to properly address problems, if the aim is to increase the chances of success in remediation and mitigation initiatives. In most international initiatives, the most successful are environmental agreements that address well-defined issues with specific goals and measurable targets, and comprehensive data.

Frameworks for the collection of statistical data and for economic-environmental accounting have also been developed to assist countries in developing, organizing and applying environmental and related socio-economic information. Despite these, grass-roots level information is inaccurate, if even available for policy makers and proponents of environmental initiatives.

What is not measured cannot be managed. Persistent data gaps and lack of proper environmental monitoring are among the challenges ahead. Internationally comparable data are the basis for tracking global environmental change, as well as for tracking progress towards the achievement of goals and objectives.

Lessons learned from the development of environmental indicators on environmental sustainability, and from other experience, could be invaluable to further guide this process.

This study aims to investigate and enumerate pressing environmental issues and concerns from an identified study site. From the gathered data, a remediation and mitigation program is proposed with the hope of addressing needs based on severity and urgency at the study site level.

## Methodology

### *Study Site*

This study covered the province of Laguna, one of the provinces in the Calabarzon Region of the Philippines. Located 30 kilometers from Metro Manila, the country's capital city, it is the third largest province in the region and one of the major economic hubs of the country. It is composed of six cities and 24 municipalities. Its proximity to the capital city, as well as its connectedness to various parts of the country through modernized road systems make it easily accessible for business and other industries.

Laguna is also rich in natural resources. It has Asia's third biggest lake, the Laguna de Bay, which supplies the province's freshwater resource requirements and form part of the people's livelihood. Nestled in the foothill of a mountain range, it provides an attraction for tourism and is a source of many forest-based products. The soil is rich and fertile, and because of its favorable climate, it can support agriculture. It has vast alienable and disposable agricultural land, and about 24% of its total land area is forestland, which is ideal for growing crops and exotic plants.

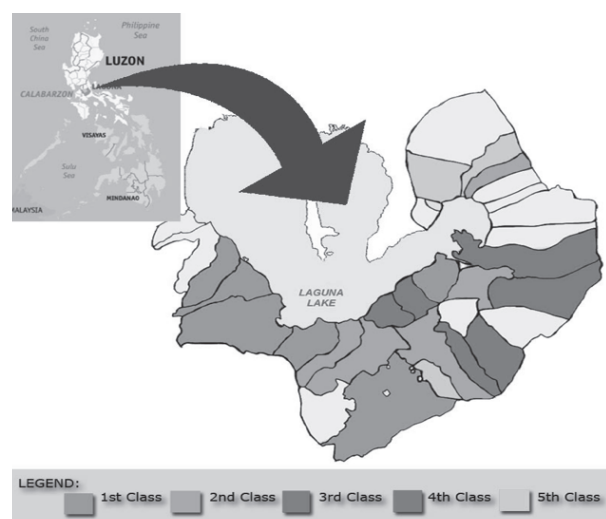
The province has a huge population of 2.7 million (2010 Census of Population and Housing), with about 67% of them in the urban region. A responsible, hardworking, and highly skilled work force abounds in the area. Furthermore, Laguna has a more than sufficient stable power supply to cover the requirements of businesses and industries.

Figure 1 shows the location map of the study site with the identified cities and municipalities from which respondents were randomly obtained. The study covered 3 cities and 15 municipalities classified according to income classes. This represents 60% of the total number of cities and municipalities in the province.

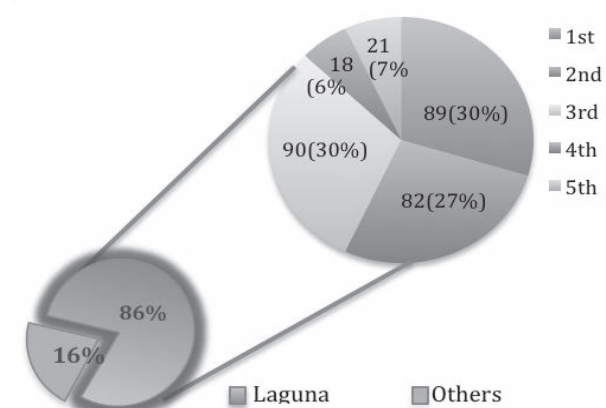
### *Respondents*

A total of 350 respondents participated in the study. Eighty percent of the respondents are residents of Laguna, the rest are from the neighboring provinces

in the Calabarzon region. The percentage and number of respondents from the five municipal classes of Laguna are shown in Figure 2. A total of 300 respondents from the province and 50 from the neighboring province on the region participated in the formal survey, as well as the number and percentage of respon-



**Fig 1 Location map of the study area**



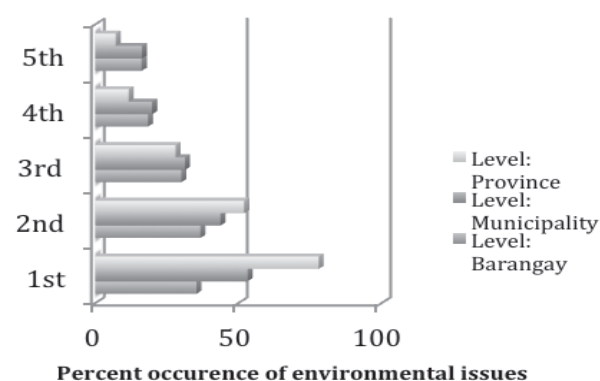
**Fig 2 Distribution of Respondents in Calabarzon and in the Province of Laguna**

dents per municipal class.

For those from the province of Laguna, there is an approximately equal number of male and female respondents. The sampled respondents consisted mostly of the youth sector. (Youth being defined by UN as these belonging to age 15-25), from average size families, and of average family income (Table 1).

## Results and Discussion

This study employed an inductive- investigative approach to problem identification. Initially, enumeration of environmental issues and concerns through informal survey was carried out. The generated preliminary list, supported by literature gave rise to the development of an inventory of environmental issues and concerns based on perspectives and level of awareness of Laguna residents. The instrument was administered to random population of residence from the province. Occurrence of these issues and concerns at various levels of their environments was determined and tabulated per municipal class as shown in Figure 3.



**Fig 3 Occurrence of environmental issues and concerns on different territorial levels**

**Table 1 Demographic characteristics of the respondents**

| Demographic Parameters |        |       |        |        |                |         |       |               |        |      |
|------------------------|--------|-------|--------|--------|----------------|---------|-------|---------------|--------|------|
| Sex                    |        | Age   |        |        | Household Size |         |       | Income Status |        |      |
| male                   | female | youth | middle | senior | small          | average | large | low           | middle | high |
| 144                    | 156    | 216   | 72     | 24     | 42             | 168     | 68    | 158           | 132    | 18   |

As shown in Figure 3, first-class municipalities identified most of the issues and concerns on the inventory as existing in their community, particularly at the provincial levels.

The number of occurrence of these issues decreased consistently across municipal classes from the first to the fifth class. In the fourth and fifth-class municipalities, identified issues and concerns are mostly perceived at the local levels.

These results indicated that perception of environmental problems is related to income class and socio-economic standing. More affluent communities tend to be more sensitive to environmental issues compared with the poor and marginalized groups.

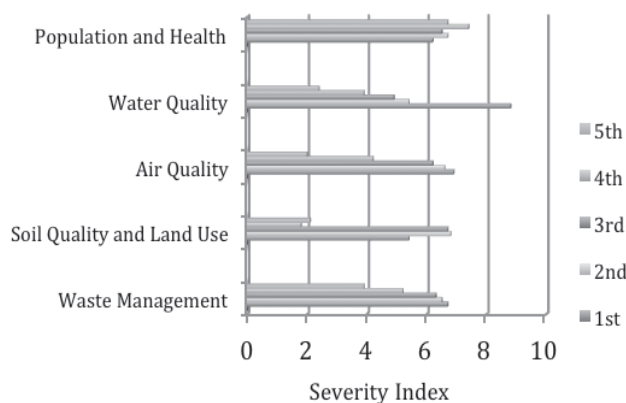
The enumerated environmental issues and concern were then grouped into broader themes of environmental problems to reflect their sense of severity and urgency based on the perspectives of the respondents. The data are summarized in Figures 4a and 4b. For the first-class municipality, the most severe problems are on water quality, air quality and waste management. The least severe area for this group is soil quality and land use. For the fifth-class municipality, the most severe problems are population and health and waste management. Less severe problems for these groups are water and air quality, as well as soil quality and land use. For the respondents coming from second, third and fourth-class municipalities,

there is moderately severe perception of all problems.

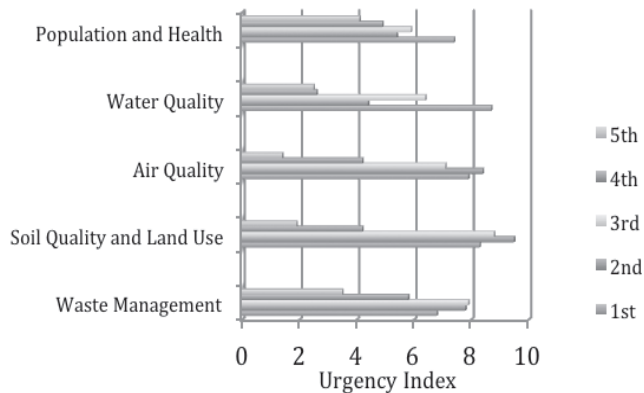
In terms of urgency of solutions to the problem, all municipalities expressed consistent sense of urgency for the problems they identified as severe. Thus, water quality ranked the highest for the first-class municipality. Air quality, waste management, land use and health and population are moderately severe and of moderate urgency for the second-class municipality. The fifth-class municipality's most urgent concern is population and health, follower by waste management. Water quality, air quality, soil quality and land use have low urgency indices for the fourth and fifth-class municipalities which are incidentally rural and agricultural in nature.

Consistency in the perception of severity and urgency is a valuable consideration in the design of mitigation and remediation initiatives. It serves as a framework for assigning high-priority areas for immediate action. For instance, in a community with severe and urgent water-quality issue, water conservation, groundwater protection and potability surveillance projects are likely to be supported and implemented.

The identified environmental problems are also ranked and compared to national and global issues. As shown in Table 2, local issues are not parallel to national and global priority items in the perspective



**Fig 4a Severity index of environmental issues and concern of the different municipal classes**



**Fig 4b Urgency index of environmental issues and concerns of the different municipal classes**

**Table 2 Local Issue Rank Priority of National and Global Concerns**

| Rank in Local Perspectives | Top National Issues                            | Rank in Local Perspectives | Top Global Issues  |
|----------------------------|--|----------------------------|--|
|                            | Destructive fishing and coastal infrastructure |                            | Global Warming   |
|                            | Deforestation                                  |                            | Clean and renewable sources of energy  |
| 4                          | Pollution                                      |                            | Persistent signs of degradation: from water and air to land and biodiversity |
| 5                          | Waste Disposal                                 | 2                          | Sustainable access to safe drinking water                                    |
|                            | Decline of natural resources and biodiversity  | 5                          | Sustainable access to basic sanitation                                       |

of the respondents. In the local scenario of Laguna Province in the Philippines, the primary concerns may not fall on any of these broad categories. Many are not familiar with concepts on biodiversity and renewable energy. They also have misconceptions about global warming. Even as an archipelagic area, people have little concern about fishing practices and coastal infrastructures. Although they recognize that the country is facing environmental challenges, they arbitrarily relate them to natural catastrophes like typhoon, earthquake, volcanic eruptions and the like.

The information obtained from the survey was validated by actual site visits. A proposed remediation and mitigation program was drawn up based on existing and established government and non-government projects. Extent of operation, participation and success rate are considered. The design mainly aims to make information available to the stakeholders and from them draw insights on how implementations can be carried out to suit their specific needs. Highlights of information are lessons drawn from international organizations pursuing a fight to save the environment, and the best practices of the neighboring nations that build their resilience and struggle to save the environment.

The provincial capitol of Laguna boasts of many projects on Environmental Protection and Preservation of Natural Resource, Agricultural Productivity

and Fishers and Coastal Management, and Land Use and Urban Planning. The existence of these projects however is not known to the majority of residents of the province. Thus, in the initial phase of the Remediation and Mitigation Program, a massive information campaign, local government support and the peoples' participation were the primary objective and indicators of success.

In the future, more suitable and specific need-based action plans will be formulated and implemented in selected communities in the province.

## Summary and Conclusion

This study attempted to reveal the perspective of the residents of Laguna, a province in the Philippines, on the environmental challenges they face at various territorial levels. The study revealed that there is little equivalence on perceived severity and urgency of the local, national and global environmental issues and concerns.

Compared to other dimensions of sustainable development, the environmental domain is weak in terms of specific, quantified goals and targets. Apart from a few targets such as those related to climate change and biodiversity, many goals and targets included are set out in general terms and mainly demonstrate the stakeholders' and proponents' good intentions.



The province of Laguna is confronted with a host of environmental problems that threaten the well being of its population and the sustainability of the said habitat. The demand for aggressive implementation of economic and industrial growth in the region is placing a strain on the health of its ecology. This condition is aggravated by the lack of informed concern about the environment.

A sound and sensible remediation and mitigation approach is believed to be one rooted on understanding the real scenarios, realizing its impact and connectedness to wider scopes of problems, issues and concerns, and the importance of action-based solutions that are local in approach but global in perspective.

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# The Role of *Phragmites Australis* for Sludge Stabilization

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下水処理によって出てくる汚泥の量は近年急激に増加している。この中に含まれる有機汚染物質を吸収するためには葦が有効であることを検証する。

## Abstract

On-site experiment on constructed wetland for surplus activated sludge treatment was presented. The research focused on polycyclic aromatic hydrocarbons (PAHs) accumulation and distribution in *Phragmites australis* during the sludge stabilization process and investigated the effect of PAHs transport in *Phragmites australis* from stabilized sludge by comparison with native ones. Quantitative analysis on the contents of PAHs in native *Phragmites australis* shows that it has obvious PAHs distribution characteristics: highest contents are in leaves, followed by stems and roots, corresponding contents are 2.583, 2.198 and 0.899 mg/kg (DW), respectively. After two-year loading and one-year natural stabilization, tested *Phragmites australis* accumulated PAHs obviously in constructed wetland. The leaf concentration factor (LCF) was slightly higher than the root concentration factor (RCF) and stem concentration factor (SCF) in plant-sediment phase, which were 3.759, 3.518 and 3.368, respectively. The PAHs contents in the root, stem and leaf of tested *Phragmites australis* are 8.13, 3.19 and 3.02 times that in native ones, which were 7.313, 7.002 and 7.814 mg/kg (DW). The RCF and SCF of the low-molecular-weight PAHs (2–3 ring PAHs) predominated (5.02 and 4.93) in all samples taken from constructed wetland, then middle-molecular-weight PAHs (4 ring PAHs)(3.15 and 2.12) and high-molecular-weight PAHs (5–6 ring PAHs)(2.29 and 2.63). LCFs of low-molecular-weight and middle-molecular-weight PAHs had higher values of 4.03 and 4.17, followed by 2.81 of high-molecular-weight PAHs.

**Keywords** constructed wetland; *Phragmites australis*; polycyclic aromatic hydrocarbons; sludge treatment

## Introduction

Wastewater sludge amounts produced in urban sewage treatment increases rapidly with the growing of the wastewater treatment industry, and sludge treatment and disposal become urgent problems to be solved across the world. Wastewater sludge is a kind of fertilizer with abundant nitrogen, phosphorus, potassium, organic matter, and other microelements. However, the pollutants in the sludge also need to be

treated suitably. Polycyclic aromatic hydrocarbons (PAHs) tend to accumulate in sediments due to their hydrophobicity and high lipophilicity and are on the blacklists of priority pollutants in many countries because of their persistence, lower biodegradability and carcinogenic properties. The surplus sludge produced in industrial wastewater treatment has higher PAHs contents up to 2000 mg/kg (Mo, et al, 2001). Benzo(a)pyrene (Bap) content is less than 3 mg/kg

(DW) in China standards of PAHs in agricultural application) while more serious standards are carried out in some developed countries. For instance, Denmark changed total quantity standard of PAHs from less than 6 mg/kg to less than 3 mg/kg on July 1, 2007. Holland sets the range of PAHs content in uncontaminated soil from 0.02 to 0.05 mg/kg (DW) (Song, et al, 2008).

Previous studies have suggested that some plants can be used for remediation of soils contaminated by PAHs (Simon and Kevin 1994; Tao, et al, 2009; Gao, et al, 2011). Constructed wetland technology provides a new way for degradation and transformation of PAHs in surplus sludge (Uggetti, et al, 2010; Cui, et al, 2012). Constructed wetland for sludge treatment is also known as sludge drying reed bed, and its relevant research and application are increasingly extensive, especially in the aspects of sludge dewatering, organic matter stabilization, removal of nitrogen and phosphorus, etc (Cooper, et al, 2004; Uggetti, et al, 2010; Cui, et al, 2011). However, research on PAHs degradation and transformation in sludge is unpublished. A three-year experimental study is presented here in order to systematically investigate PAHs transformation effects in stabilized sludge by constructed wetland.

## Materials and Methods

### *Constructed wetland construction*

A constructed wetland system is located in the Dalian Development Zone wastewater treatment plant, Liaoning Province, China, which is composed of sludge pump, sludge feed tank and reed bed. The size of reed bed is 3.0 m × 1.0 m × 1.3 m. The height includes a 0.65 m media layer and 0.65 m super height. The substrata in the reed bed unit comprised a 0.2 m slag layer, a 0.2 m gravel layer, a 0.05 m coarse sand layer, and a 0.2 m fine sand layer from the bottom to the top, while a free board of 0.65 m was allowed for accumulation of dewatered sludge.

The drainage system was made of 3 m perforated PVC pipe with a diameter of 0.2 m and located on

the bottom of the bed. Sludge percolate was recycled to the wastewater treatment system through special piping.

### *Operation and maintenance*

The experiment lasted three years: the first year was adjustment phase, the second year was normal operation phase and the third year was natural stabilization phase.

The system started in mid-May of the first year. After *Phragmites australis* was transplanted and the tender plant was cultivated for 25 days, the sludge began to load on the bed intermittently. One cycle was set at seven days with feed sludge amount of 600 L within 30 minutes. The experiment in the first year lasted for 18 periods and stopped when the *Phragmites australis* rotted away. The system operated for 24 periods in the second year. The total thickness of feed sludge reached 8.4 m, and main raw sludge characteristics are average 99.14% water content, 8.14 g/L and 7.04 g/L of TSS and VSS concentrations. Average sludge loading on reed bed was 41.3 kg/m<sup>2</sup>·y.

The average PAH content of raw sludge was 5.69 mg/kg, the low-molecular-weight PAHs (2-3 rings Nap, Acy, Ace, Fle, Phe, Ant and Fla) predominated (48.01%), middle-molecular-weight PAHs (4 rings Pyr, BaA, Chr, BaF and BkF) and high-molecular-weight PAHs (5-6 rings BaP, IcP, DaA and DaP.) accounted for 33.14% and 18.85%, respectively.

At the end of the third year, the average PAHs content in stabilized sludge was 2.08 mg/kg, the low-molecular-weight, middle-molecular-weight and high-molecular-weight PAHs accounted for 39.2%, 38.6% and 22.2%, respectively.

### *PAH analyses*

Sample pretreatment: Firstly, the samples were fair-dried naturally and ground through 100 mesh sieve, then weighed 1 g sample in 100 ml Erlenmeyer flask, added 2 g of anhydrous sodium sulfate and 1 g of copper powder in the sample; Secondly, the sample was dissolved with 60 ml n-hexane - dichlorometh-

ane (1:1) mixed solvent, ultrasonic extraction for 90 min, centrifugal for 30 min (3000 r/min); Thirdly, rotary evaporation; Finally, constant volume to 4ml and set aside for subsequent use.

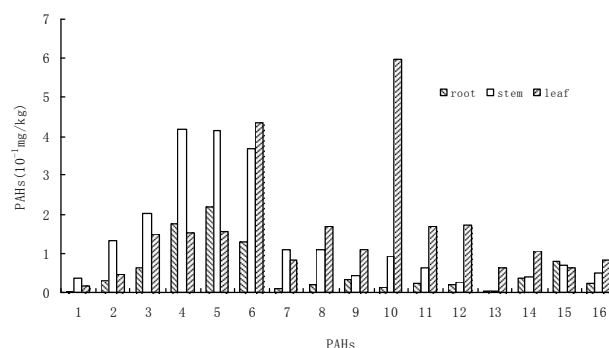
**Sample purification:** column chromatography method was used for sample purification. Firstly, weigh 2.0 g silica gel and 3.0 g anhydrous sodium sulfate (burn for 6h at 600°C) to make homogenate in the beaker with a small amount of n-hexane. Then put a small amount of cotton wool and 0.3 g quartz (60-80 mesh, activated at 130°C for 16 h) at the bottom of the column and Infiltrate the column with 10ml hexane; Secondly, fill the column with the sample, which is eluted by 40 ml n-hexane - dichloromethane (1:1) mixed solvent; Thirdly, rotary evaporation (until the eluted solution is dried up); Finally, constant volume to 4 ml under the protection of high purity nitrogen, moreover, the PAHs content is quantified by GC/MS according to external standards method.

**GC/MS conditions:** GC-2010 gas chromatography / mass spectrometry instrument (Shimadzu, Japan) is used for PAHs determination; the capillary column is made of SE-54 high-resolution paddy quartz. (length of 30.00 m, internal diameter of 0.25 mm, film thickness of 0.25  $\mu$ m); Temperature program: the initial column temperature is 100° C and held to 280° C with a speed of 5° C/min, then maintain for 30 min; The injection volume is 1  $\mu$ L; The carrier gas is high purity nitrogen; the column flow rate, makeup gas flow rate and pre-column pressure are 0.88 mL / min, 20 mL/min and 85.6 kPa separately; a split injection method is processed with a split ratio of 10:1; the inlet temperature and detector temperature are both 280 ° C; EI ionization mode is adopted with the ionization energy of 70 eV; the scanning slope of full-scan mode ranges from 100 to 400 amu.

## Results and Discussion

### PAHs distribution in native *Phragmites australis*

Native *Phragmites australis* samples were taken at the end of plant growth season and analyzed. The



**Fig. 1** PAHs distribution in native *Phragmites australis*

**Table 1** Percentages of Low, middle and high molecular weight PAHs in total PAHs/%

| PAHs                    | root | stem | leaf |
|-------------------------|------|------|------|
| Low-molecular-weight    | 70.4 | 76.9 | 40.5 |
| Middle-molecular-weight | 12.9 | 15.4 | 47.1 |
| High-molecular-weight   | 16.7 | 7.7  | 12.4 |

PAHs contents were presented in Fig. 1.

PAHs in *Phragmites australis* are clarified into three kinds according to their fused rings. Low-molecular-weight PAHs include 2-ring and 3-ring Nap, Acy, Ace, Fle, Phe, Ant, Fla; middle-molecular-weight PAHs include 4-ring Pyr, BaA, Chr, BaF and BkF. High-molecular-weight PAHs include 5-ring and 6-ring BaP, IcP, DaA and DaP. From Figure 1 and Table 1 we can get the content distribution characteristics in native *Phragmites australis* as follows:

The contents of low-molecular-weight PAHs in roots and stems were 70.4% and 76.9%, respectively, indicating a predominant distribution. While middle-molecular-weight and high-molecular-weight PAHs contents were relatively low, being 12.9%, 16.7% (in roots) and 15.4%, 7.7% (in stems), respectively. Middle-molecular-weight and low-molecular-weight PAHs predominated in *Phragmites australis* leaves the contents of 47.1% and 40.5%, but high-molecular-weight PAHs left only contents of 12.4%.

*Phragmites australis* stems had relatively higher content of low-molecular-weight PAHs (including Phe, NaP, Acy, Ace, Fle, Phe) than that in roots and



leaves. However, middle-molecular-weight and high-molecular-weight PAHs (including Pyr, BaA, Chr, BbF, BkF, BaP, IcP, BgP) contents in leaves were much higher than that in roots and stems, moreover, Chr was the most effectively adsorbed by *Phragmites australis*.

These characteristics of native *Phragmites australis* may result from the atmospheric PAHs. Previous research has showed that (44±18)% of PAHs in atmosphere was adsorbed and purified by plants (Simonich, and Hites 2004). The results in this research showed that stems and leaves exposed in atmosphere play the role of adsorption PAHs from atmosphere directly, mainly including low-molecular-weight PAHs such as Ace, Fle, Phe, Ant and Chr. The high PAHs content found in leave suggested that these PAHs were derived from atmospheric deposition in gaseous or particulate forms, and that atmospheric fall-out might be the main input pathway for PAHs in these plants. While low contents in the roots might have resulted from the relative low PAHs content in the sediments at the *Phragmites australis* sample site (Guo, Pei, Yang, et al 2011).

### Distribution of PAHs in *Phragmites australis*

Distribution of PAHs in tested *Phragmites australis* in the second and third years were presented in Table 2 and Table 3. Total concentrations of PAHs in different *Phragmites australis* parts were compared in Table 4.

Macroscopically speaking, it is found in this research that low-molecular-weight PAHs predominated in *Phragmites australis* root and stem, including relatively high content of BbF. However, *Phragmites australis* leaf had higher content of middle-molecular-weight and high-molecular-weight PAHs, especially Chr.

The distribution characteristics of PAHs in tested *Phragmites australis* in the second year can be described that the PAHs content in root increased as time goes until the maximum value in November, while PAHs contents in stem and leaf increased until the maximum value in October, both showed the ability of *Phragmites australis* for PAHs bioaccumulation.

Both plant species and PAHs content in environment affect the PAHs content in plants, and PAHs content differentiate in different parts of the same plant. It is found that plant near the industrial zone has a high total content (in root) of 12.3 mg/kg (Lee, et al, 1990). In this research, the tested *Phragmites australis* obtained bioaccumulation rate of 813% (root), 319% (stem) and 302% (leaf) compared to the native ones. Apparently, PAHs were taken up by roots and then transferred to the stem and then leaf within plants. Chr was detected in the highest content of 1.524mg/kg in root while Nap was the lowest (0.090 mg/kg): Ant was the highest (1.246 mg/kg) in stem, while Nap was the lowest (0.095 mg/kg); Phe was the highest (1.395 mg/kg) in leaf and Fla was the lowest (0.062 mg/kg).

### Bioaccumulation ability of *Phragmites australis*

PAHs can be taken up by roots and leaves and translated within plants. The PAHs accumulation ability can be described using the following equation:

$$\begin{aligned} \text{RCF} &= C_{\text{root}} / C_{\text{sediment}} \\ \text{SCF} &= C_{\text{stem}} / C_{\text{sediment}} \\ \text{LCF} &= C_{\text{leaf}} / C_{\text{sediment}} \end{aligned}$$

Where  $C_{\text{root}}$ ,  $C_{\text{stem}}$ ,  $C_{\text{leaf}}$ ,  $C_{\text{sediment}}$  represent the contaminant content in plant root, stem, leaf and sediment.

PAH concentration factors in *Phragmites australis* root, stem and leaf in the third year are listed in the Table 5.

The calculated RCF values range from 0.837 (BaA) to 11.991 (Phe), SCFs range from 0.739 (BbF) to 13.707 (Phe), LCFs range from 0.739 (Fla) to 15.127 (Phe). 87.5% of PAHs accumulated in the tested *Phragmites australis*. The low-molecular-weight PAH concentration factors in *Phragmites australis* root, stem and leaf are 5.02, 4.93 and 4.03, respectively, higher concentration factors may result from relatively high hydrophobicity and bioavailability of PAHs. The middle-molecular-weight PAH concentration factors in *Phragmites australis* root,

**Table 2** Distribution of PAHs in tested *Phragmites australis* in the second year ( $10^{-1}$ mg/kg)

| NO | PAHs | root  |       |       | stem  |       |       | leaf  |       |       |
|----|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|    |      | Sep   | Oct   | Nov   | Sep   | Oct   | Nov   | Sep   | Oct   | Nov   |
| 1  | NaP  | 0.111 | 0.111 | 0.482 | 0.773 | 0.807 | 0.715 | 0.523 | 0.485 | 0.724 |
| 2  | Acy  | 0.387 | 0.387 | 0.597 | 2.291 | 1.692 | 1.614 | 0.525 | 0.95  | 1.104 |
| 3  | Ace  | 1.255 | 1.255 | 2.118 | 2.395 | 3.193 | 2.832 | 2.209 | 1.746 | 1.246 |
| 4  | Fle  | 2.131 | 2.131 | 3.092 | 4.289 | 5.329 | 5.034 | 3.397 | 3.865 | 3.916 |
| 5  | Phe  | 2.812 | 2.812 | 3.559 | 4.988 | 5.04  | 5.875 | 2.316 | 2.358 | 1.283 |
| 6  | Ant  | 2.912 | 2.912 | 4.76  | 3.969 | 4.842 | 4.512 | 5.151 | 5.23  | 5.234 |
| 7  | Fla  | 0.795 | 0.795 | 1.173 | 1.271 | 3.153 | 2.392 | 1.289 | 1.103 | 2.079 |
| 8  | Pyr  | 0.900 | 0.900 | 1.073 | 1.268 | 1.353 | 1.474 | 1.781 | 2.437 | 2.823 |
| 9  | BaA  | 0.909 | 0.909 | 1.885 | 1.048 | 0.954 | 0.752 | 1.181 | 2.498 | 1.362 |
| 10 | Chr  | 0.256 | 0.256 | 0.995 | 1.68  | 1.862 | 1.681 | 6.01  | 6.064 | 6.516 |
| 11 | BbF  | 1.069 | 1.069 | 2.143 | 1.848 | 3.112 | 1.119 | 1.94  | 1.823 | 2.727 |
| 12 | BkF  | 0.691 | 0.691 | 1.702 | 0.772 | 0.765 | 1.196 | 2.392 | 4.289 | 2.291 |
| 13 | BaP  | 0.192 | 0.192 | 0.339 | 0.58  | 0.47  | 0.545 | 0.714 | 0.794 | 1.473 |
| 14 | IcP  | 1.198 | 1.198 | 1.044 | 1.118 | 1.649 | 1.555 | 1.761 | 1.633 | 1.57  |
| 15 | DaA  | 1.051 | 1.051 | 1.051 | 0.877 | 1.84  | 1.478 | 0.778 | 1.874 | 0.951 |
| 16 | BgP  | 0.534 | 0.534 | 0.815 | 0.652 | 1.508 | 0.766 | 1.533 | 1.619 | 1.522 |

**Table 3** Distribution of PAHs in *Phragmites australis* in the third year ( $10^{-1}$ mg/kg)

| NO | PAHs | root  | stem  | leaf  |
|----|------|-------|-------|-------|
| 1  | NaP  | 0.90  | 0.95  | 0.82  |
| 2  | Acy  | 2.26  | 4.37  | 1.22  |
| 3  | Ace  | 3.30  | 3.80  | 3.60  |
| 4  | Fle  | 4.80  | 4.38  | 4.00  |
| 5  | Phe  | 10.9  | 12.46 | 13.75 |
| 6  | Ant  | 11.84 | 12.05 | 7.55  |
| 7  | Fla  | 5.70  | 2.46  | 0.62  |
| 8  | Pyr  | 2.78  | 2.49  | 2.57  |
| 9  | BaA  | 1.26  | 3.24  | 13.95 |
| 10 | Chr  | 15.24 | 3.82  | 6.90  |
| 11 | BbF  | 0.96  | 1.76  | 5.44  |
| 12 | BkF  | 3.15  | 4.23  | 3.48  |
| 13 | BaP  | 3.70  | 8.60  | 7.80  |
| 14 | IcP  | 2.39  | 2.34  | 3.57  |
| 15 | DaA  | 2.22  | 1.68  | 1.72  |
| 16 | BgP  | 1.73  | 1.39  | 1.15  |

**Table 4** Total contents of PAHs in tested *Phragmites australis* ( $10^{-1}$ mg/kg)

| Part | Tested <i>Phragmites australis</i> |        |        |                | Native <i>Phragmites australis</i> |
|------|------------------------------------|--------|--------|----------------|------------------------------------|
|      | The second year                    |        |        | The third year |                                    |
|      | Sep                                | Oct    | Nov    | Nov            |                                    |
| root | 17.205                             | 26.827 | 36.447 | 73.13          | 8.99                               |
| stem | 29.819                             | 37.569 | 33.54  | 70.02          | 21.93                              |
| Leaf | 33.5                               | 38.768 | 36.821 | 78.14          | 25.83                              |

**Table 5** PAH concentration factors in *Phragmites australis* root, stem and leaf (mg/kg, DW)

| NO.           | Compounds | RCF    | SCF    | LCF    |
|---------------|-----------|--------|--------|--------|
| 1             | NaP       | 1.125  | 1.188  | 1.025  |
| 2             | Acy       | 1.642  | 3.175  | 0.886  |
| 3             | Ace       | 2.562  | 2.950  | 2.795  |
| 4             | Fle       | 4.111  | 3.751  | 3.426  |
| 5             | Phe       | 11.991 | 13.707 | 15.127 |
| 6             | Ant       | 6.507  | 6.622  | 4.149  |
| 7             | Fla       | 7.194  | 3.105  | 0.782  |
| 8             | Pyr       | 3.067  | 2.747  | 2.836  |
| 9             | BaA       | 0.837  | 2.152  | 9.267  |
| 10            | Chr       | 9.513  | 2.385  | 4.307  |
| 11            | BbF       | 0.403  | 0.739  | 2.286  |
| 12            | BkF       | 1.929  | 2.591  | 2.131  |
| 13            | BaP       | 1.840  | 4.276  | 3.878  |
| 14            | IcP       | 2.724  | 2.667  | 4.069  |
| 15            | DaA       | 2.290  | 1.733  | 1.774  |
| 16            | BgP       | 2.308  | 1.854  | 1.534  |
| Total average |           | 3.518  | 3.368  | 3.759  |

stem and leaf are 3.15, 2.12 and 4.17, respectively. And the values of high-molecular-weight PAH are 2.29, 2.63 and 2.81, respectively. Although PAHs are easily taken up by root and leave, the translation mechanism within *Phragmites australis* was not clear (Dettenmaier, et al, 2009). Based on the result of this research, we conclude that tested *Phragmites australis* can accumulate PAHs effectively compare to native ones, higher PAH contents in soil corresponds to higher PAH contents in *Phragmites australis*. Especially we can get the conclusion that PAHs content increase in tested *Phragmites australis* stem and leaf may result from root adsorption and translation in plant.

## Conclusions

PAHs in sludge can be effectively accumulated by *Phragmites australis* in constructed wetlands. After two years of sludge loading period and one year of natural stabilization period, the PAH contents in tested *Phragmites australis* root, stem and leaf increased notably, reaching 7.313, 7.002 and 7.814 mg/kg (DW), corresponding to 8.13 times of native ones in roots, 3.19 times in stems, 3.02 times in leaves, respectively. Low-molecular-weight PAHs are more easily accumulated than middle-molecular-weight and high-molecular-weight PAHs. Sixty four percent of PAHs in stabilized sludge by constructed wetland were removed.

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# Towards Green and Healthy Commercial Centers in Asian Cities: Evaluating Sustainability of Green Open Spaces in Shopping Malls

ショッピング・モールの中に大きな  
露天のグリーンスペースを作るとし  
たら、それは経営的に成り立つのか。  
マニラで行った検証結果を発表する。

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## Abstract

This paper aims to approximate the amenity values of parks inside malls and evaluate their sustainability, approaching it from the contingent property valuation angle, using hedonic price modeling. Through a case study of restaurants inside malls (interviews and mapping inventory), it will establish the correlation between restaurant distances to park amenities. It is hypothesized that retail shops or restaurants located near the parks have a higher probability of ROI (return on investment) despite higher rental fees, due to volume of foot traffic generated by this amenity. Geographic Information Systems (ArcGIS) is used as a tool in measuring these observations. Factor analysis is performed to determine the significant variables, after which these are entered into a regression analysis to corroborate initial assumptions and hypotheses regarding the inverse proportionality between ROI and zoning/ distance and view to park, i.e. the nearer the shops are to the park, the higher the ROI. It is the researcher's hope that having the parks' economic viability and sustainability established will encourage urban planners and mall developers to allocate more generous portions of green open space, thereby contributing to the general welfare of its users and ultimately enhancing sense of place and communion with nature.

**Keywords** sustainable design, green open spaces

## Introduction

In a consumerist society where practicality and profitability are regarded as foremost in the scale of priorities, where space allocation for rentable units is usually at a minimum in order to maximize revenue for the developers (whether housing or commercial ventures), there is a need to pause and consider the monetary value of what generally are regarded as non-revenue-generating amenities offered to the public for free, such as parks and open spaces.

Numerous real estate empirical observations on determining property values have been applied to

housing, where proximity to parks dictates a higher market value for potential homeowners who are willing to pay a premium to enjoy this amenity. However, there are hardly any study available on determining amenity values of these parks inside malls or commercial developments, mainly because these are dictated by and exclusive to their respective private developers and would entirely depend on their product branding and established priorities in space planning, classified competitive information that is not made readily available for public consumption.



Moreover, although these civic spaces to a certain extent belong to the public realm, they are nevertheless privately-owned, precluding possibility of fiscal attention from government in the form of subsidies or tax shields, as in the case of public parks. Depending on their location, whether in a CBD of prime property or in the outskirts of a city, their values can be extremely high, such that a large allocation of space could mean sunk investment or lost business opportunity for the mall developers, owing to the conversion of use from potential revenue-generating units to common areas made accessible for the public to enjoy at no added cost to these users.

Real estate market value will be the most direct measure of the economic value of open space, which is the cash price that a buyer pays a seller in an open and competitive market. In urban or urbanizing regions, where highest and best use (as determined by the market) has usually been development, as in the case of Makati CBD where Greenbelt and Glorietta parks are located, or of Quezon City where SM Sky Garden and TriNoma Roofdeck Garden are found, the open space value of land should be separated from its development value. Paradoxically, developing these spaces into parks (though non-revenue generating) would lead to an appreciation of their economic value as they become nodes of social interaction and focal points of interest.

## Research Problem

The main research problem hinges on finding out to what extent parks in shopping malls contribute to the increase in level of patronage of shops and restaurants within proximate distance to the park.

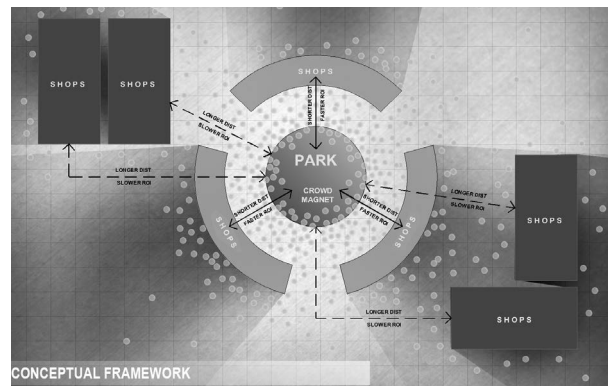
As for the sub-problems, the following questions were formulated:

- In examining the costs of land, development and maintenance of these parks, how do the mall developers get a return on their investment considering the lost business opportunity for revenue-generating units and the fact that these amenities are offered to the public at no added cost?

- How can the value of the land being occupied by the park (per sqm) be monetized in terms of: capital investment, operations/ maintenance expenses, cost of improvements, amenity values and, eventually, return-on-investment (ROI)?
- What is the strength of the relationship between the monthly rental fees of these tenants largely affected by their proximity to the park, i.e. the closer to the park, the higher the rental? How do these fees compare with shops or restaurants located inside the mall with no views of the park?
- To what extent does the park act as a node, i.e., is it a strong magnet for customers, generating volume of foot traffic for the shops and restaurants located contiguous to it?

## Hypothesis

In evaluating the sustainability of these green open spaces in mall developments, the basic assumption is that the park acts as a magnet to generate a volume of foot traffic which spills over to the shops and restaurants located nearest to it, especially those found on the ground floor, immediately contiguous to the open area. It is hypothesized that the shops and restaurants nearest the park are charged a premium rental fee per month. Nevertheless, despite the higher fees, they are able to recover their expenditures in a few weeks due to their strategic location and the volume of foot traffic generated by these nodes or magnets.



**Fig. 1 2D Conceptual Diagram Model of the Sustainability of Parks in Malls**

## Research Methodology

### Research Design: 3 Phases

#### Phase 1: Mapping Inventory/ Comparative Analysis

A handful of initial case studies was done for a background, specifically on the following: (a) Ayala Greenbelt Park in Makati, (b) Glorietta Parks in Ayala Center Makati, (c) SM North Sky Garden and (d) Trinoma Roof Deck Garden. However, it is the Ayala Greenbelt Park which will be the main focus of study, as it has the highest percentage allocation of green open space in relation to the building footprint and the entire property area.

### RESEARCH DESIGN

Initial case studies (as a backgrounder) were done on the following:

#### PHASE 1: MAPPING INVENTORY/ COMPARATIVE ANALYSIS



Fig. 2 Phase 1 - Photos of shopping malls studied from the mapping inventory angle

#### Phase 2: Questionnaire Surveys & Interviews

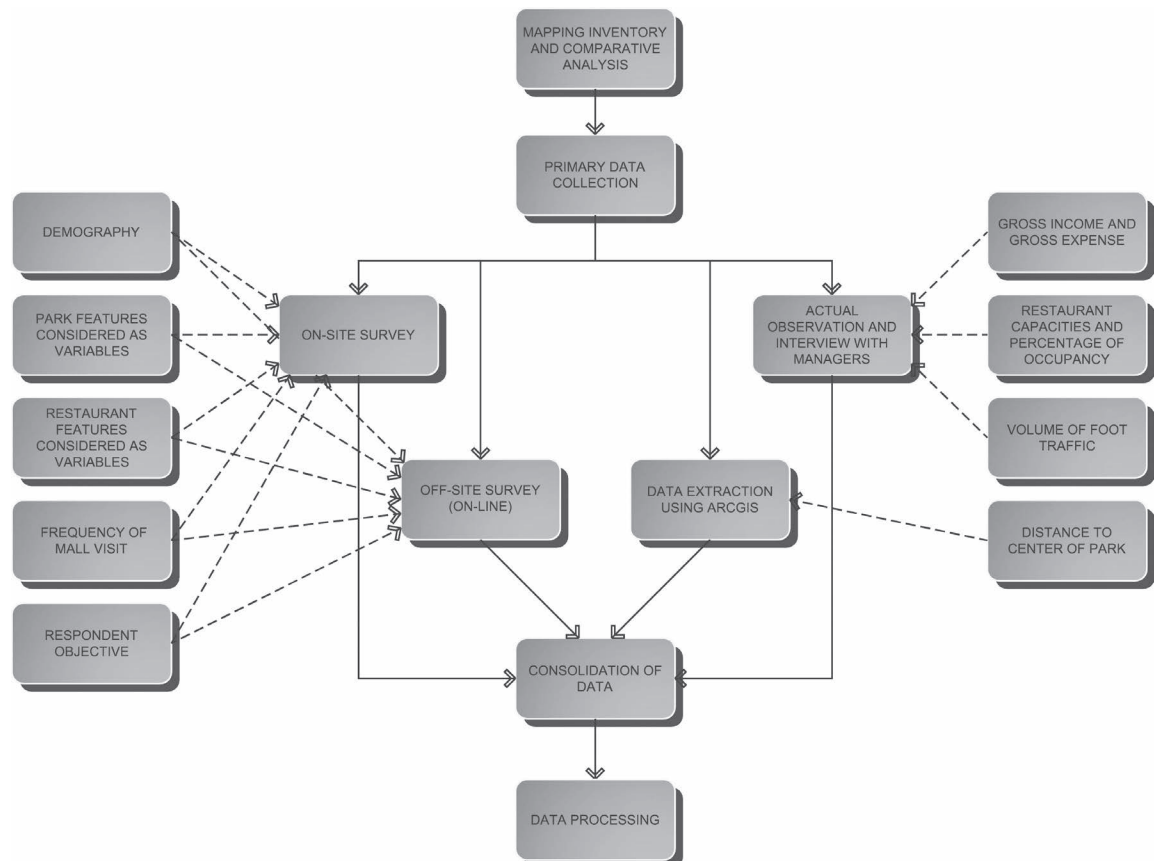
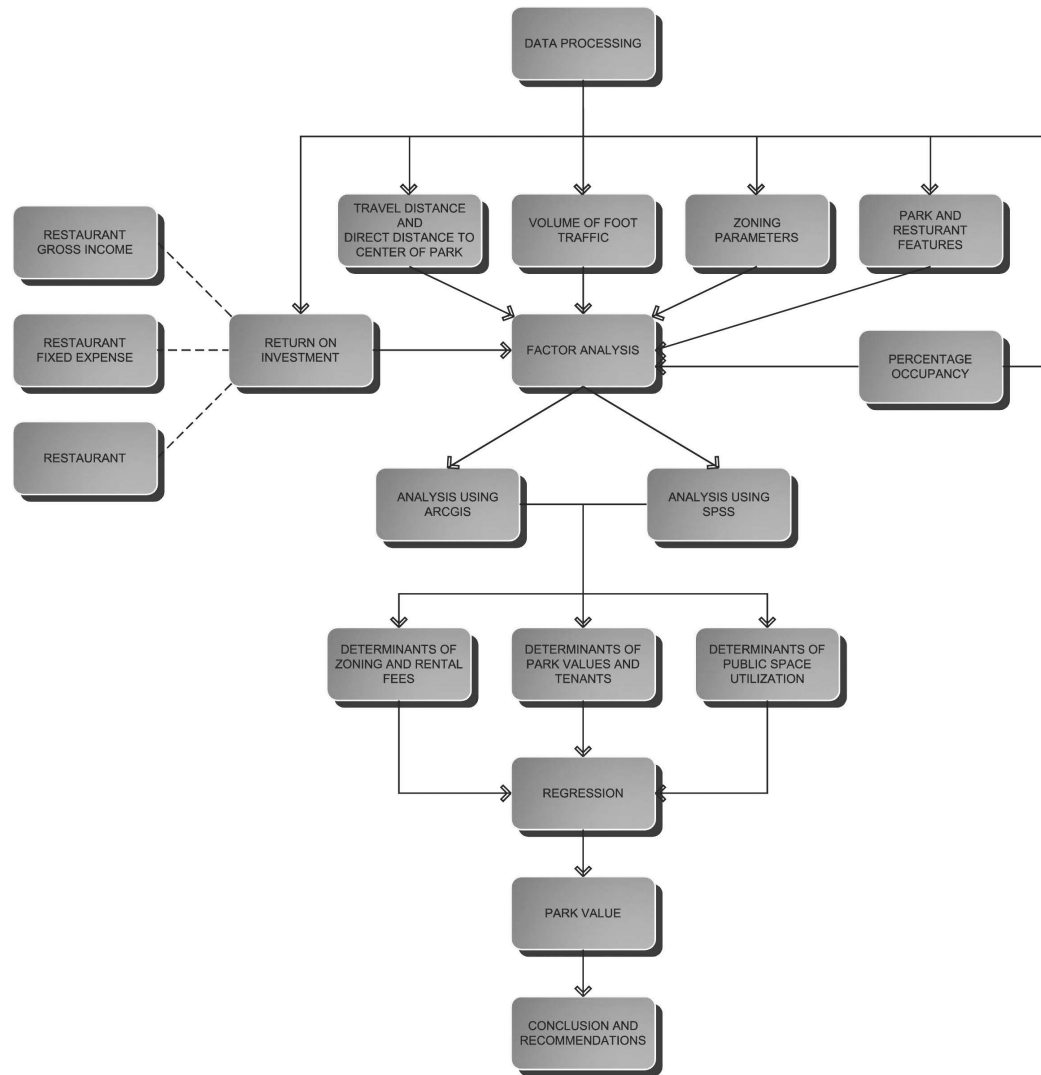


Fig 3 Diagram showing Flow of Data Gathering and Analysis for Phase 1

### Phase 3: Factor Analysis and Regression



**Fig. 4 Diagram showing Factor Analysis of Variables and Regression Process for Phase 3**

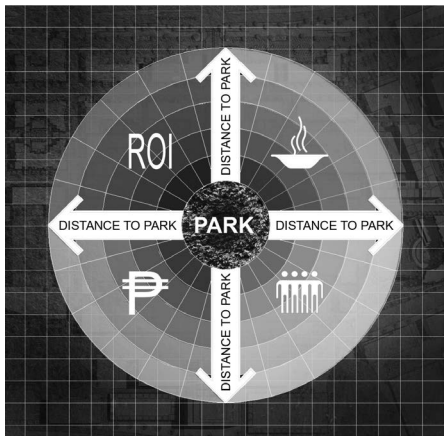
A shortlist of restaurants and their rental fees was generated, with the volume of customers counted in relation to their proximity to the park. A computation of the footprint area of these open spaces in relation to the total lot and the total commercial development was derived from mapping inventory, the use of CAD and GIS software. Based on a review of literature, interviews and actual observation, the variables

which have a strong bearing (strong predictors) of the amenity value of Greenbelt park were determined, after which a correlation among these variables was established. For the correlational strategy, using the Contingent Property Valuation Method, a formula equation combining the variables and their relation to the amenity value was derived.

### Hedonic Price Modeling Equations

After getting primary data both from interviews and statistical description from the survey questionnaires, the values were applied to the Hedonic Price Modeling for regression. In this case, the hedonic application was used for determining or at least approximating the economic value of Greenbelt Park. A hedonic model of park-in-mall values was expressed in 2 categories, where one is for the tenant and the other is for the mall owner, as follows:

The primary data gathered from survey questionnaire responses and interviews were analyzed using Statistical Package for Social Sciences (SPSS) and other software used in statistics such as SAS and STATA to get the appropriate tests and results based on the data set and objectives.



**Fig. 5 Diagram showing Correlation of Variables for Park Value from Tenants' Viewpoint**

### Park Values for the Tenant:

$$PV_{\text{tenant}} = f(\text{Dist}, RF, VP, FQ, RA, PA)$$

- PV is the amenity value of the park measured in terms of ROI (Return-on-Investment), which is the variable dependent on the following:
  - Dist = the distance from the center of the park and forms part of the location-specific characteristics; distance to the park as a significant predictor, inversely proportional to the ROI, meaning, the closer the tenant is to the park, the higher the rate of ROI

- VP= Volume of Persons or foot traffic generated by the landscape amenity
- FQ = Food Quality
- RF = Rental Fees per month
- RA= Restaurant Amenities (e.g. wifi, ambience of the place, food service)
- PA = Park Amenities (e.g. size, location, landscaping features, covered areas, lounging space, lighting, water features)

Thus, the linear equation for the hedonic price modeling is as follows:

$$y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \dots \beta_n x_n + \varepsilon$$

This equation is applicable for all the regression models wherein:

$y$  = dependent variable

$\alpha$  = coefficient of regression

$\beta$  = coefficient of 1st parameter  
(indep. variable 1)

$x$  = independent variable 1

$\varepsilon$  = error term

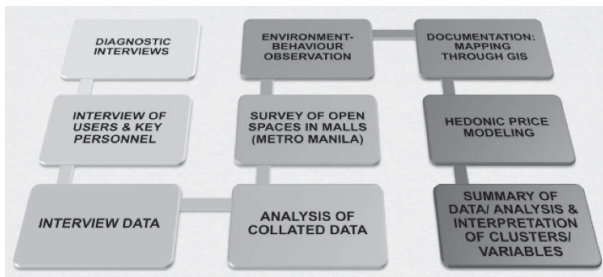
For the financial viability variables, the following equations are drawn:

- Net Income (NI) = Gross Sales (GS) less expenditure (Exp)
- $NI = GS - \text{Exp}$
- Expenditure (Exp) = Fixed Cost (FC) + Variable Cost (VC)
- Fixed Cost (FC) = Operations Costs (OC) + Maintenance Costs (MC)
- Fixed Exp = OC + MC
- Operations Cost = salaries, utilities (electricity, telephone, water), rental fees, transportation/delivery costs
- Maintenance Cost = repairs and maintenance of equipment/ vehicles and building interiors
- Variable Cost (VC) = Cost of Goods Sold (CGS) + 5% of Gross Sales (GS)
- CGS = 35% of gross sale



**Park Values for the Mall Owner:**

- $PVMall = ROIMall = (a) > [(b) + (c)]$
- Revenues (Rev) of the Mall = [percentage of gross income of tenants (5% GI) + monthly rental fees (MRF) + Other Income (OI)]
  - $Rev_{mall} = 5\% GI + MRF + OI$  (a)
- Capital Outlay (CO) = [cost of land investment (LIn) + land improvements, i.e., trees, soil, utilities, etc. of the park (LImp)]/ Time (T)
  - $CO = \frac{LIn + LImp}{T}$  (b)
- Expenditure (Exp) = operations (OC) + maintenance costs (MC)
  - $Exp = OC + MC$  (c)



**Fig. 6 Process in Collecting and Analyzing Primary Data**

Primary data gathered from survey questionnaire responses and interviews were analyzed using Statistical Package for Social Sciences (SPSS) and other software such as SAS and STATA to get the appropriate results based on the data set and objectives. Respondents consisted in actual on-site customers of Greenbelt 3 restaurants with 60% occupancy, through convenient sampling, as the researchers approached the potential respondents already seated in their respective restaurants of choice.

## Summary of Findings/ Results

### *Phase1: Geographical & Social Considerations*

The quantitative comparative analysis is based on footprint area taken from satellite maps. A computation of the area utilization is itemized according to the following:

- building footprint area
- total open spaces within lot (TOSL) is further broken down into:
  - unpaved surface areas (USA) and
  - impervious surface areas (ISA)

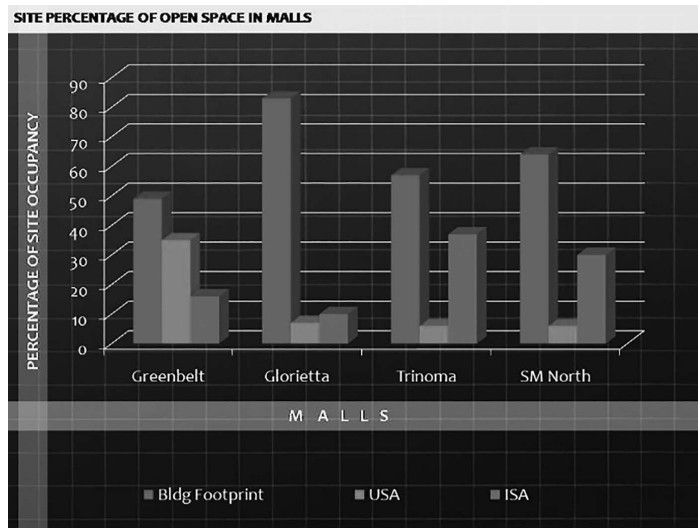
Since the impervious surface areas refer to the parking lots, access roads, driveways and circulation areas, pedestrian walkways, cemented grounds, etc., the computation of the park or green open spaces was limited to the unpaved surface areas with actual trees and plants contained in its environs.

A comparison of the case studies regarding space allocation of the 4 Malls (Greenbelt Makati, Glorietta, SM North and TriNoma) shows the biggest ratio of park areas to total lot area in Greenbelt Makati, at 33-35%. The 3 other malls allotted a range of 5-7% of green open space in relation to total lot area. Building footprint ratio to open space is largest in Glorietta at 83%, hence the decision to focus on Greenbelt Park. (Fig. 7, 8, 9)

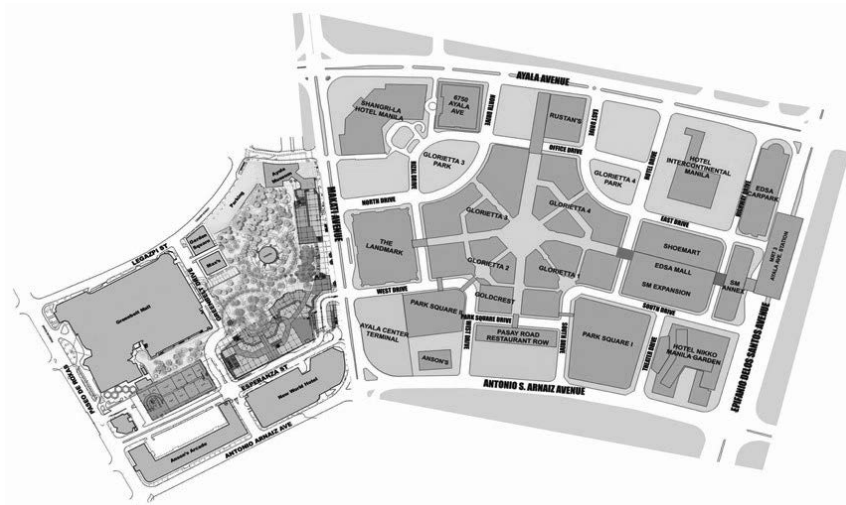
The Greenbelt Park has a total of 3.3 hectares, a substantial area coverage given the total lot area of Ayala Malls at 11 hectares. This allocation of space approximates 30% of the total lot area of Ayala Greenbelt Development. Compared to the building footprint area, the Unpaved Surface Areas (USA), which constitute the park, is equivalent to 35%, while the Impervious Surface Areas (ISA) amount to about 16%.

### *Phase 2a: Data from Questionnaire Surveys*

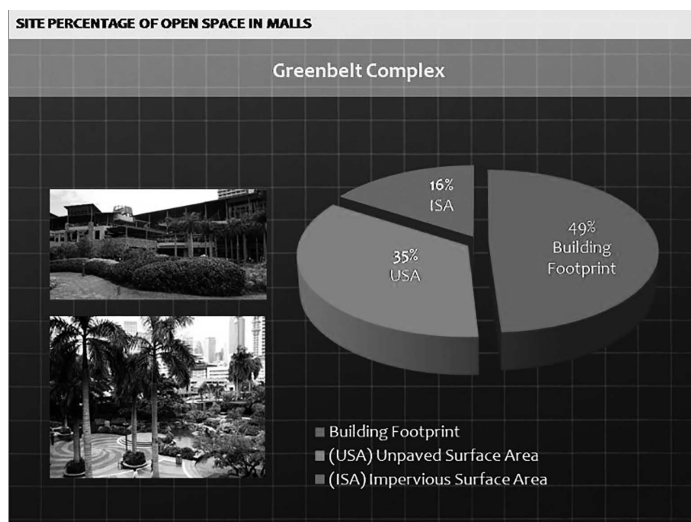
There were 2 types of surveys conducted depending on mode of data extraction: (a) on-site—within Greenbelt Complex premises, using the printed questionnaire survey form, and the other set, (b) off-site/online—where the respondents were asked to fill out an electronic survey form. From the months of October through December 2012, a total of 346 responses were gathered from on-site data collection. However, after filtering the survey forms (removing those that had several blanks or unanswered items), about 327 were considered valid responses. In January 2013, an online survey was conducted, and a total of



**Fig. 7 Comparative Chart showing the Allocation of Building Footprint vs. Total Open Space of the 4 Mall**



**Fig. 8 Map showing location of Greenbelt Park in relation to the Ayala Greenbelt & Glorietta Malls Development**



**Fig. 9 Ratio of Open Space to Building Footprint—Greenbelt Park**

**Table 1** Tabulation of Restaurants Studied in Detail

| RESTAURANTS STUDIED IN DETAIL |                        |          |             |                |        |         |            |         |       |
|-------------------------------|------------------------|----------|-------------|----------------|--------|---------|------------|---------|-------|
| No.                           | Establishment          | Location | Floor Level | Capacity       |        |         | Area (sqm) |         |       |
|                               |                        |          |             | Total Capacity | Indoor | Outdoor | Indoor     | Outdoor | Total |
| 1                             | Coffee Bean            | GB 3     | G/F         | 135            | 55     | 80      | 213        | 40      | 253   |
| 2                             | Starbucks              | GB 3     | G/F         | 114            | 44     | 70      | 134        | 63      | 197   |
| 3                             | Cafe Havana            | GB 3     | G/F         | 160            | 48     | 112     | 189        | 82      | 271   |
| 4                             | Seattle's Best         | GB 3     | G/F         | 155            | 35     | 120     | 97         | 90      | 187   |
| 5                             | Banana Leaf            | GB 3     | 2/F         | 100            | 68     | 32      | 159        | 24      | 183   |
| 6                             | Serenitea              | GB 3     | 3/F         | 28             | 4      | 24      | 22         | 26      | 48    |
| 7                             | Figaro                 | GB 3     | 3/F         | 52             | 40     | 12      | 90         | 15      | 105   |
| 8                             | J.CO Donuts and Coffee | GB 3     | 3/F         | 44             | 32     | 12      | 136        | 19      | 155   |
| 9                             | Krocodile Grille       | GB 3     | 3/F         | 250            | 150    | 100     | 187        | 58      | 245   |
| 10                            | Seafood Island         | GB3      | 3/F         | 110            | 50     | 60      | 110        | 50      | 60    |
| 11                            | Red Mango              | GB3      | 4/F         | 52             | 35     | 17      | 55         | 38      | 93    |

154 responses were gathered. Eliminating those who left blank more than 3 questions, the valid responses were narrowed down to 146. All in all, total number of respondents was 492, but we retained 473 valid responses.

### ***Phase 2b: Data from Questionnaire Surveys***

A total of 4 interviews from top-level executives of Ayala Land and Greenbelt Mall management were conducted. Interviews were conducted with the VPs, managers and the chief architect, which provided insight on the history and paradigm shift to alfresco (outdoor) dining in Makati despite the tropical climate, as well as restaurant managers. The purpose of the interviews was to obtain data on the economic aspects of the restaurants which will be used in the quantitative analysis relating to ROI, rental rates, peak hours and percentage occupancy. These will complement the data obtained from the surveys rating the park amenities and restaurant features. Some managers were generous enough to disclose the breakdown of expenditures, i.e. salaries, operations/ maintenance expenses, costs of goods (food & beverage), common area dues (security, janitorial services, waste disposal, building costs) as well as the revenues (gross sales, net income, ROI), which were a great help for this section of the quantitative analysis.

Based on a series of interviews and actual observations, 4 zoning categories were drawn up. These zones coincide with what Ayala Management calls

“prime” and “super-prime” areas. In principle, according to Greenbelt Mall manager, all the shops in Greenbelt 3 are prime. These enjoy the amenity value of the park and they benefit from the view to the landscaped areas. Those that are on the ground floor, however, are considered “super-prime,” owing to the volume of foot traffic generated with all the ingress/ egress points plus the proximity and direct access to the park. Those located at the second floor may still be considered part of the “super-prime” areas since these benefit from the flow of customers coming from the elevated walkway connecting Greenbelt to the rest of the Ayala offices and Landmark/ Glorietta Malls all the way to EDSA MRT. The shops on the 3rd and 4th levels can be considered “prime” as these catch the spillover of persons coming from the cinemas on the 4th level.

For purposes of comparative analysis, the following zoning categories were drawn up:

**Table 2** Zoning Categories with Specific Parameters

| Zone Category | Description/ Parameters  |
|---------------|--|
| Zone 1        | Ground floor restaurants with indoor/ outdoor seating in Greenbelt 3 that have direct access to the park and very high volume of foot traffic        |
| Zone 2        | Second floor restaurants with indoor/ outdoor seating in Greenbelt 3 that have a fairly good view to the park and high volume of foot traffic        |
| Zone 3        | Third and fourth floor restaurants with indoor/ outdoor seating in Greenbelt 3 that have some view to the park and moderate volume of foot traffic   |
| Zone 4        | Restaurants that are distant from and do not have a view to the park (e.g. indoor restaurants in Greenbelt 1 (with moderate volume of foot traffic)) |



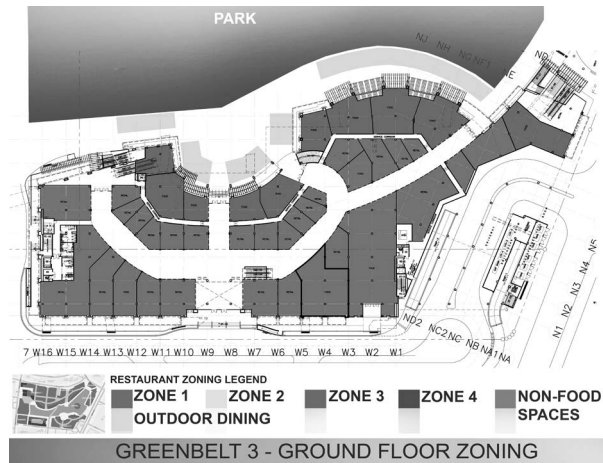


Fig. 10

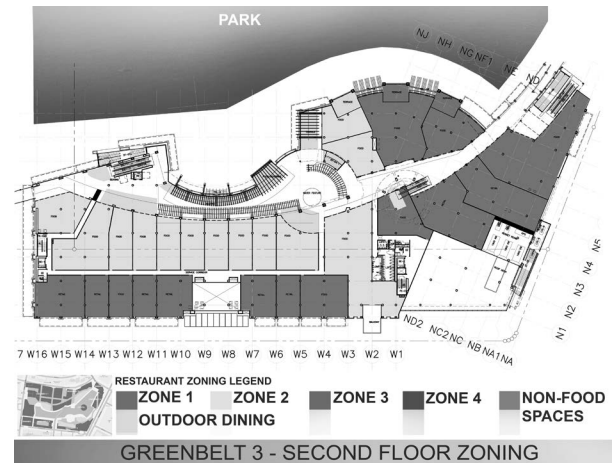


Fig. 11

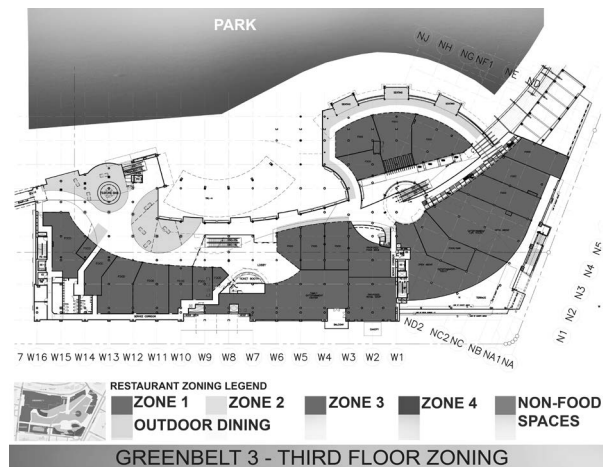


Fig. 12

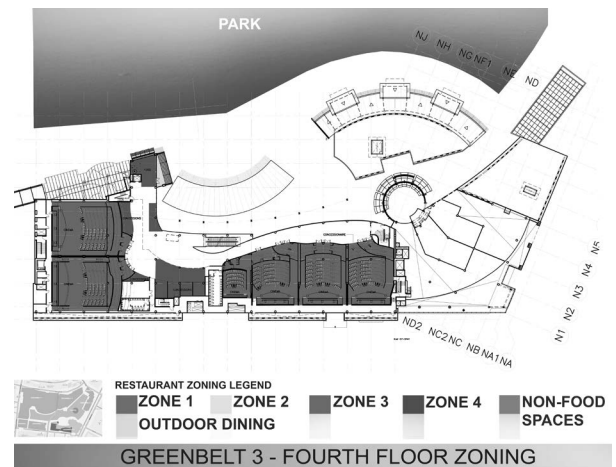


Fig. 13

Fig. 10-13 Zoning Map of Ayala Greenbelt Malls categorized according to Zones 1 to 4.

From the zoning parameters, a zoning map was generated for the entire Greenbelt Complex (cf. Figs. 11-14 below), as well as a series of tables were drawn which reflected the following: volume of foot traffic, area of restaurants, capacity and percentage occupancy, rental rates, itemized expenditures and ROI. These data were used as the basis for identifying the zones and for Phase 3 statistical analyses.

In the zoning diagram, we recorded both the travel distance and the straight distance. However, for purposes of analysis and regression, we opted for the straight distance since it represents the access to view of the park measured to its center.

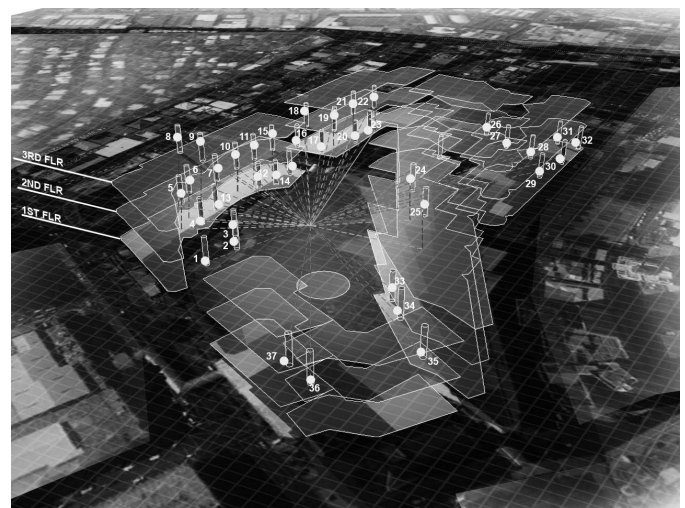


Fig. 14 A 3D Exploded View of Greenbelt Floor Plans Showing Straight Distances from Restaurants to Center of Greenbelt Park



### Phase 3: Factor Analysis and Regression

Phase 3 mainly consists of the quantitative analysis of this research study, wherein two statistical methods were used: (1) factor analysis and (2) regression analysis.

The objective of factor analysis was to determine which variables from among the park and restaurant features are important as deemed by the survey respondents. The strong correlation that exists among the variables was determined and these were reduced to 4 dimensions, those considered most important, starting from Factor 1, descending in importance till the last.

Factor 1 (physical setup): view\_to\_park, furniture\_layout, privacy, lights, ambience, bright\_colors, music\_sounds, acoustics, independent access

Factor 2 (restaurant service): friendly\_service, prompt\_response, wifi, affordable

Factor 3 (restaurant image): smoking\_area, storefront, social\_status, size\_space

Factor 4 (food quality): good\_food, variety, food\_presentation

**Table 3 Rotated Factor Matrix with Varimax/ Kaiser Normalization**

|                  | Factor |       |       |      |
|------------------|--------|-------|-------|------|
|                  | 1      | 2     | 3     | 4    |
| good_food        | .171   | .302  | -.106 | .625 |
| variety          | .160   | .181  | .110  | .748 |
| food_presentn    | .170   | .038  | .276  | .612 |
| ind_access       | .395   | .108  | .312  | .405 |
| view_to_park     | .470   | -.005 | .329  | .207 |
| furn_layout      | .559   | .148  | .196  | .252 |
| privacy          | .650   | .317  | .091  | .096 |
| lights           | .731   | .199  | .207  | .182 |
| ambience         | .486   | .385  | .154  | .141 |
| bright_colors    | .525   | .200  | .407  | .089 |
| music_sounds     | .485   | .305  | .330  | .209 |
| acoustics        | .392   | .276  | .351  | .137 |
| friendly_service | .319   | .564  | .058  | .255 |
| prompt_response  | .186   | .800  | .048  | .242 |
| wifi             | .213   | .522  | .255  | .086 |
| smoking_area     | .319   | .058  | .551  | .099 |
| affordable       | .157   | .622  | .406  | .083 |
| storefront       | .115   | .524  | .539  | .113 |
| social_status    | .326   | .234  | .676  | .125 |
| size_space       | .187   | .483  | .586  | .080 |

The outcome of the Factor Analysis is that of reducing the 20 variables of the restaurant features into 4 factors or dimensions, wherein Factor 1 figures as the most important set of elements a customer is looking for in a restaurant. ***View to the park is included in Factor 1.***

The objective in regression analysis is to model the relationship between a dependent variable and one or more predictor/ independent variables. We used a stepwise regression procedure to select a subset containing only significant predictors. From the actual data tabulation of both on-site and online surveys, a merged data set consisting of 327 respondents was used as reference for the regression analysis of 80 variables obtained from the questionnaire regarding park features and restaurant features. (Table 4, 5)

Even the regression analysis shows that the view of the park figures as a high preference among the customers. The interpretation of the relationship between this variable and distance to the park is interpreted as follows: When a customer has a high preference for the view of Greenbelt Park, the distance of the restaurant decreases by 41.2144m relative to Greenbelt Park, holding all other variables constant. (Table 6)

The coefficient of multiple determination measures the percentage variation in ROI that can be explained by the independent variables. It can be said that this is the BEST model we have, wherein ALL variables are significant, where 94.63% of the variation in ROI can be explained by all of the variables included in the regression equation which are: capacity, rent, zone1, zone2 and zone3. (Fig. 15)

### Conclusion and Recommendations

The factor analyses show that the physical set-up with the feature of view to the park is a significant variable for the restaurant customers, alongside ambience, inviting storefront, social class image, furniture layout and bright colors, among others. The regression results corroborate the initial hypothesis

**Table 4 Regression Results using Distance as Dependent Variable (vs Park Features: 80 variables)**

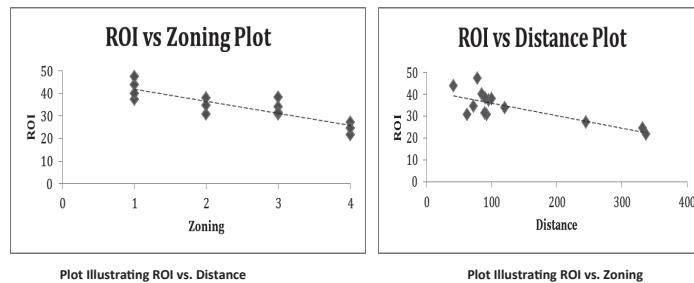
| Distance | Coefficient | Std Error | T Critical Value | P-value | [95% Confidence Interval] |          |
|----------|-------------|-----------|------------------|---------|---------------------------|----------|
| pa16     | -46.1140    | 10.8023   | -4.2700          | 0.0000  | -67.3669                  | -24.8610 |
| ra5      | 194.3065    | 53.5555   | 3.6300           | 0.0000  | 88.9386                   | 299.6744 |
| ra7      | -79.0182    | 25.8034   | -3.0600          | 0.0020  | -129.7851                 | -28.2513 |
| ra10     | -41.2144    | 12.1296   | -3.4000          | 0.0010  | -65.0789                  | -17.3500 |
| ra30     | -24.2699    | 11.9015   | -2.0400          | 0.0420  | -47.6856                  | -0.8543  |
| ra34     | 44.3936     | 14.0312   | 3.1600           | 0.0020  | 16.7878                   | 71.9994  |
| ra36     | 29.9716     | 14.4440   | 2.0800           | 0.0390  | 1.5538                    | 58.3894  |
| ra38     | -39.6813    | 13.1010   | -3.0300          | 0.0030  | -65.4568                  | -13.9058 |
| _cons    | 176.2003    | 12.9271   | 13.6300          | 0.0000  | 150.7668                  | 201.6338 |

**Table 5 Listing of Extracted Significant Independent Variables and their Codes**

| Variable | Definition   |
|----------|--|
| pa16     | High park smoking customer preference                                    |
| ra5      | Low food presentation customer preference                                |
| ra7      | Low Independent access to restaurant customer preference                 |
| ra10     | High view to park customer preference                                    |
| ra30     | High restaurant wifi access customer preference                          |
| ra34     | High affordable restaurant customer preference                           |
| ra36     | High inviting storefront of restaurant customer preference               |
| ra38     | High reflective of social class/status of restaurant customer preference |

**Table 6 Regression Results using ROI as Dependent Variable (vs Zoning, Rental Fees, Restaurant Capacity)**

|          | Coefficient | Std Error | T Critical Value | p-value | [95% Confidence Interval] |          |
|----------|-------------|-----------|------------------|---------|---------------------------|----------|
| capacity | 0.01854     | 0.00369   | 5.02000          | 0.00000 | 0.01128                   | 0.02580  |
| rent     | -0.00003    | 0.00000   | -30.84000        | 0.00000 | -0.00004                  | -0.00003 |
| zone1    | 18.03012    | 0.36296   | 49.68000         | 0.00000 | 17.31604                  | 18.74421 |
| zone2    | 11.87875    | 0.35772   | 33.21000         | 0.00000 | 11.17498                  | 12.58252 |
| zone3    | 1.58226     | 0.43933   | 3.60000          | 0.00000 | 0.71793                   | 2.44659  |
| _cons    | 34.14409    | 0.27785   | 122.89           | 0.00000 | 33.59745                  | 34.69072 |

**REGRESSION RESULTS R.O.I. AS DEPENDENT VARIABLE****ESTIMATED REGRESSION MODEL**

By inspecting the graphs of the plots, it can be seen that Foot traffic and Rent have direct proportionality to ROI, while Zoning & Distance are inversely proportional to the ROI, meaning, the nearer the distance to park, the faster the ROI.

**Fig. 15 Regression Results Graphs (ROI as dependent)**

that the nearer the restaurants and shops are to the park, the higher their zoning classification (Zone 1 highest to Zone 4 lowest) which translates to higher rental fees. But due to an expected higher volume of foot traffic and the attraction of the park, these restaurants with higher rental fees are able to recover their investment and expenditures and have a faster rate of return (RR) or return on investment (ROI). Using equations from hedonic price modeling, a rule of thumb is established among the correlated variables in the study of ROI, using volume of foot traffic, rental fees, zoning, capacity and percentage occupancy of restaurants vis-à-vis their proximity to the amenity (in this case, the park). An incremental pattern is shown in the regression tables, where increase or decrease in a certain variable affects the other aspects of the study by a concrete quantitative factor. Therefore, the relationship between distance to the park and ROI is a negative relation, inversely proportional to each other, since the lower the distance (the nearer to the park), the higher the rate of return. ***This strong correlation illustrates the economic and social sustainability of the Greenbelt Park from the point of view of the tenants as well as for the mall owners.***

This research will contribute to mall developers and designers in their economic feasibility studies prior to setting up a commercial development and will be a guide in space allocation of green open spaces within the premises. Since their sustainability (social, environmental and economic viability) as well as feasibility in space planning have already been validated by this extensive study, it will hopefully encourage urban planners and mall developers to allocate a more generous portion of parks and landscape in the commercial master plan (whether footprint of the lot or floor area of the entire building).

It is proposed that local codes/regulations be revised to mandate commercial establishments to allot a higher percentage of unpaved surface areas, from a staggering 5-10% to a minimum of 10-15% or even higher of Total Open Spaces within Lot (TOSL) and Total Lot Area (TLA). Section 803 of

the The National Building Code (PD 1096) could be reviewed and revised to increase this space allocation and specify them as green open spaces & permeable surfaces instead of limiting it to a general classification of Unpaved Surface Areas (USA).

This will redound to the general welfare of its users, increase revenues and ROI for the mall owners, while improving the ecological balance of the environment, working towards increasing the ratio of green spaces per person and improving air quality as well as enhancing sense of place.

Repercussions of this study could enhance the “mall” experience not only in the Philippines but in the rest of Asia and the entire world as well, contributing to upgrading the lifestyle of shoppers and diners, with a view to greater interaction of customers with the natural environment, planting and nurturing the seed towards an earth-friendly consciousness in families: a blueprint for sustainable patterns and green lifestyles for the future of our planet earth.

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# Agriculture, in Architecture, in Cities

## In Pursuit of Sustainable Urban Landscapes

私たちはもっと身近な空間で農業をすべきである。街のなかで、ビルのなかで食べられる植物を育てれば、空気はきれいになり、人々は健康になる。

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### Abstract

By 2040, Metro Manila will have a population of 13,788,000 (13.8M) up from a 2010 population of 11,552,100 (11.6M) reported by National Statistics Office (NSO). Future urban life will face graver conditions not only from global climate change but from the high cost of electricity, transportation and food due to our dependency on diminishing fossil fuel. There will be insufficient land in the rural land for food, and further, an increased demand for fuel will make the production and transport of these products to urban areas highly expensive.

Presently, for our food supplies, we need to conserve rural farms and start a renaissance of urban agriculture in our land and houses for subsistence and commercial agriculture in our public and private land and buildings in the cities. Thus, transporting food from the rural to urban areas will decrease, as will the number of vehicles and carbon emissions. An abundance of vegetation, especially edible plants, in the cities means cleaner air, fresher food and healthier people.

This paper will demonstrate how edible plants can visually enhance the city landscapes and functionally make food more available. Horizontally, we need to grow organic plants in plazas, parks, streetscapes, squatter-free rivers and esteros, school yards, under overpasses, residential front and back yards and other easements. And vertically, we need to grow plants in buildings like barangay halls, public market, residential condominiums, high-rise buildings on their façades breezeways, walls and roofs.

The vision of appropriate environmentally balanced cities utilizing vegetation that integrates fresh and healthy edible plants in culturally and architecturally acceptable ways, may provide urban livelihood and healthy, cool and green living conditions for sustainable urban landscapes.

**Keywords** Sustainable Urban Landscapes, Urban Agriculture

### Megacity Metropolitan Manila, Philippines

Metropolitan Manila is a megacity comprised of 16 cities: Caloocan, Las Piñas, Makati, Malabon, Man-

daluyong, Manila, Marikina, Muntinlupa, Navotas, Parañaque, Pasay, Pasig, Quezon City, San Juan, Taguig, Valenzuela and the municipality of Pateros. From its center and capital Manila, it grew by 14.6



City of Manila—Photo courtesy of Landscape Architect Paolo Alcazaren

square kilometers every year from 1948 to 1996. As reported by the National Statistics Office, in the 2010 Census the population was then 11,552,100 (11.6 M) and by 2040, Metro Manila will have a population of 13,788,000 (13.8 M). Not only in Metro Manila, but around the world, people migrate to cities for new opportunities for livelihood, especially for employment.

How should Metro Manila residents live in the future? Are we ready to be environmentally sustainable by then? How are we to feed the new millions in the cities?

***Project objectives of this paper are:***

- To reintroduce food production in urban areas, as well as join the world in pursuing a shift to natural food systems. To create edible landscapes instead of ornamental landscapes in our public and private places.
- To educate and encourage design and planting edible plants in our cities which will visually enhance the city landscapes and functionally make food more available and healthier.

Thus, transporting of food from the rural to urban will be lessened and there will be fewer vehicles and lower carbon emissions. Abundance of vegetation in the cities means cleaner air, fresher food and healthier people.

## **My Understanding of Agriculture**

I was born in Manila. From age 1 to 4, I grew up in Munoz, Nueva Ecija in Central Luzon Agriculture College (now Central Luzon State University—CLSU). It is one of the premiere institutions for agriculture in the Philippines and in Southeast Asia known for its research in aquaculture, ruminants, crops, orchards, and water management research, where my mother was a teacher while my father worked in the Mountain Province as an engineer. I remembered our native house made of wood and sawali surrounded by mango trees and at the rear were cornfields.

At 5, we moved to my parent's hometown Tanay, in the province of Rizal, where my lolos (grandfathers) were farmers while my lolas (grandmothers) were meat and grocery store vendors in the public market. My paternal grandfather was a rice and crop farmer. He always brought me and my cousins to his farm across the river and we enjoyed the day gathering guavas, kamachile, aratiles and kasoy and swimming in his "Batil" – a meter-high hollow block, rectangular-shaped pool where water from the river were pumped up and contained before releasing to the land to irrigate it.



In 1960, author and mother at Central Luzon Agriculture School, Munoz, Nueva Ecija, Philippines

## **Green Revolution "Masagana 99"**

During high school, in our parish school, we were asked to start planting vegetables in vacant land as part of the government program Green Revolution without understanding what was it really.

From the 1940s through the 1970s, to increase world food production, the Green Revolution was



In the 1970s, high school students were asked to plant vegetables in vacant land. The government introduced Masagana 99 to local farmers



Studying is more fun at the University of Santo Tomas, Manila, Philippines



Ondoy Flood 2009 at Tanay, Rizal, Philippines

introduced in poor countries such as Mexico, India, Pakistan, and the Philippines, through crop breeding and increased use of fertilizer, pesticides, and irrigation. Under the regime of former President Ferdinand E Marcos, the Green Revolution was about planting varieties of Rice “Masagana 99,” developed by the International Rice Research Institute (IRRI). “Masagana 99” was under the IRRI’s technology and financial management. Masagana is a Tagalog dialect word meaning bountiful, while the 99 referred to the target harvest of 99 cavans per hectare per season for the well-irrigated rice with the increased use of fertilizer and pesticides.

While I was in college, my grandfathers died and the farm of my paternal lolo, who was able to send all his sons to college, was left to caretakers with 70/30 proportion of income in goods or money. My maternal lolo left his farm to his high school-educated son. Thus, my old uncle is still trying his best to manage the farm. He reaped a lot of benefit from the farm and provide a comfortable living for his children better than my family.

Now, I am teaching Architecture at the University of Santo Tomas (UST) in Manila on weekdays and on weekends I am in my hometown Tanay. Most of us Filipinos are residing in Metro Manila and its fringes because it is more fun to study then work in Metro Manila, Philippines.

The state of agriculture in Tanay is not that good due the Ondoy flood in 2009 which destroyed the irrigation dams and mango and fruit orchards, as

well as the soil, and according to the farmer on my father’s land the soil became ferrous making planting difficult. But to address the challenges of Metro Manila as a megacity in the promotion of urban agriculture, it is important to understand its beginnings

## History of Urban Agriculture

Man’s evolution from hunters to farmers to industrial workers to technological urbanites overshadowed the transition of forests to farmlands to towns whose densities gave birth to the cities that rose vertically worldwide. The growth in population that propelled this journey required parallel advances in agricultural production.

Our early ancestors and my grandparents spent the majority of their waking hours planting crops, searching for edible plants and roots and hunting wild herds, and later carrying for livestock. The discovery of agriculture (the Neolithic Revolution) transformed our relationship with the planet and each other. Man’s creative ability to adapt was demonstrated by the Ifugaos in Banaue and Batad Rice Terraces in the transformation of slopes of the mountains into terraces for planting rice, the Filipino staple food, without leaving their habitat.

The social and political organization of the population in the widely scattered 7,000-plus islands evolved into a generally common pattern. As population grew, more food and new settlements had to be established leading to the the concept of territori-





Batad Rice Terraces,  
Ifugao, Philippines

ality, supported by farming of permanent rice fields in the lowlands and uplands.

When the Spanish arrived in the sixteenth century, the majority of the estimated 500,000 people in the islands still lived in barangay settlements. In 1571, Lopez de Legazpi laid out the first plan for a capital city in the Philippines, which became a walled area called “Intramuros,” later on, part of city of Manila. From 1896 to 1898, the Philippines fought for independence from Spain, with aid from the United States, which eventually resulted in Philippine colonization by the U.S.

In 1904, Burnham was asked by the U.S. Commissioner to the Philippines, William Forbes, to redesign Manila, which had greatly increased in size since the first plan by the Spanish. The preservation of the planning of the Intramuros followed by the subsequent development carried out in Burnham’s general plan allowed Manila to reach its place as an international city today. By increasing public open space, he opened up more opportunities for recreation and public life. His inclusion of new landscaping also improved the aesthetic appeal of the city’s core by supplementing the buildings with lawns, groves, and tree-lined streets. Agriculture occupied the outskirts of the city and other goods were coming from different regions and islands of the country. The growth of the population led to specialization in agriculture differentiated by the soil, climate, and demand.

Thus Central Luzon developed as the rice capital of the country, the Mountain province for green “temperate” vegetables, the Ilocos for garlic, Tarlac Province for sugar, Bicol province for copra and pili, Batangas for beef, just to mention a few.

Hunting for deer, wild pigs and wild labuyo by the natives could no longer be sustained as forests were largely overtaken by land development and the aborigines were absorbed into the domestic fabric of the existing socio-cultural structures. Others fled to the deepest mountains.

To meet the exponential increase in demand for protein, western techniques in livestock and poultry farming on small, medium and corporate scale were introduced and always accepted by Filipinos as the practical way to supply food for the metropolis and the entire country.

## The Green Revolution

In 1968, the former United States Agency for International Development (USAID) director William Gaud, introduced the term “Green Revolution” and explained to the world the new revolution in food production: “*through crop breeding and increased use of fertilizer, pesticides, and irrigation.*”

In our country, rice is the most staple food and is produced extensively on every island in the lowlands and uplands. The government under former President Marcos and the IRRI took specific measures to achieve the goals to increase the production of rice but accompanied by use of chemical fertilizers and pesticides as well as building of irrigation dams in almost all of the farmlands. During the fifteen years that the system was implemented, the rice yields tremendously increased but various problems sprouted such as later droughts, typhoons and flooding, economic and political crisis, and, in recent years of over-production of rice, the long-term use of heavy fertilizers and pesticides created environmental problems that made the ricefields unproductive. Also, the use of chemicals in farms resulted in various diseases for humans, such as cancer and leukemia, as well as degradation of the environment.

Now, the world and the Philippines are resorting to producing food employing organic farming methods in response to side effects from their adoption of Green Revolution agriculture techniques.

## Future Urban Life

Future urban life will face graver conditions not only from global climate change but from worldwide over-population and from the high cost of electricity, transportation and especially food due to our dependency on diminishing fossil fuels which is part of every aspect of our modern lives.

The population of the Philippines in 2014 (current figure) as reported by the National Statistics Office in 2010 census is 100.6 million. In Metro Manila, based on the 2010 census results (the next census will be in 2015) the population was then 11.6 million but Metro Manila area was spilling out more along its fringes. Thus this means more people, more food, and food—both local and imported— will be more expensive.

To make things more complicated, our country has had numerous natural calamities such as floods, landslides, earthquakes and sadly, the recent storm surge “Yolanda” in the Visayas, in the central islands of the Philippines. The rice paddies have turned barren in Rizal, Bulacan, Pampanga and Pangasinan provinces while coconuts and fruit trees were destroyed in Laguna Province. Thus, local food produce and livestock were limited and expensive. There will be insufficient land in the rural land for food, as well as the increased demand for fuel will make the production and transport of these products to urban land highly expensive.



Recent flood and storm surge destroyed farms and fruit trees

## Feeding more people in the city, we find ways

Presently, for our food supplies, we need to conserve our rural farms and start a renaissance of agriculture in our land and houses for subsistence, and commer-

cial agriculture in our public and private land and buildings in the cities. There is a need to simplify the food supply cycle to eliminate excessive transport fuel expenses and harmful chemical fertilizers and pesticides, and provide a selection of nutrients with beneficial and healthy effects on human consumption.

**According to Peter Moore, author of the book *Agriculture and Urban Areas*, “the breeding of cattle produce while producing large carbon dioxide emissions consumes green food of which only 10% is able to be passed on to the human consumer. A short food chain is important economically because at each stage energy is passed from one organism to another. For example if we grow lettuce and consume it directly, then we are acting as sole grazer. And where we consume, digest and assimilate a plant or animal into our bodies, there is a very high level of waste. Exactly how inefficient such transfers can be varies with the different exchange and organisms but as general rule about 90 percent of available energy is lost at each transfer. When we can consume our lettuce, we only succeed in obtaining about 10% of that energy that is available to us from the source.”**

By growing our own food in our garden and in our city and then eating them the same day, this reduces transportation miles, energy and carbon footprint of the food produced. It is apparent that the phenomenon of global warming has direct links to food production and urban agriculture is a work in progress in the development of the multi task of addressing the need for food while protecting human health and helping alleviate environmental problems.

The ill effects that emerged from the previous efforts to address the huge world demand for food through the “Green Revolution” has brought about new paradigms in food production: Organic Farming, Urban Agriculture, Green Architecture and Edible Aesthetic Urban Landscape Architecture.

## Horizontally

We need to grow organic plants in plazas, parks, streetscapes, easements and esteros, schoolyards, vacant lots and lower levels of interchanges. In Chile, they planted corn in the Forking Paths Park, while in another country, they planted edible plants in the lower levels of interchanges.

**In schoolyards**—as part of the education system, incorporated in the elementary and high school curriculum, vegetable gardening in the schoolyard and cooking of their produce in school.

**The Philippine Dept. of Education (DepEd), in cooperation with the Oh My Gulay! (OMG),** food advocacy program, started to expand its vegetable garden project in schools called “Gulayan sa Paaralan” (gardens in schools) to address malnutrition due to Filipinos non-consumption of vegetables. Vegetable gardening to be part of the curriculum of schools.



Gardens in schools

**Large residential lots**—the residents in their front and back yards, to plant edible plants and fruit-bearing trees instead of ornamental plants. For residences without yards, a practical option is for vegetables to be grown in recycled containers. Also utilize creative methods of drip irrigation with recycled materials. Bio-gradable garbage can also be composted for fertilizer.

We also encourage



Vegetable garden in front yards - Photo courtesy of Agricultural Training Cebu, Philippines



Plant nursery owners to sell weeks-old vegetable plants

plant nursery owners to sell weeks-old vegetable plants, herbs and medicinal plants. They can sell them in parks or flea markets and even market them in carts in different villages and subdivisions.

In conjunction with the establishment of urban farms, undertake initiatives to urge the government to implement the 1989 rainwater-collection law, Philippine Republic Act No. 6716 (1989). It states: The Department of Public Works and Highways (DPWH) shall, within thirty (30) days after the approval of this Act, undertake construction of rainwater collectors in all barangays in the Philippines in such number as may be needed and feasible, taking into consideration the population, hydrologic conditions

**The disconnection of the idea of growing food in the mega-city urban setting has already been bridged through real experiences that now form the justification for urban agriculture.**

**Quezon City has launched its “Joy of Urban Farming” program.** Quezon City Mayor Herbert Bautista, Vice Mayor Joy Belmonte and Agriculture Secretary Proceso Alcala formally inaugurated a 700-square-meter urban vegetable garden at the Quezon Memorial Circle to serve as the showcase of the program with the technical training by the Department of Agriculture. The city government is encouraging residents and school-children to grow their own vegetable patch in their schools, homes and on idle land.



Urban Farming (Demo Farm) at the Quezon Memorial Circle (Park), Quezon City, Metro Manila

## Vertically

We need to grow plants in buildings like barangay halls, public market, residential condominiums, high-rise buildings in their façade, breezeways, walls



and roofs. Part of a bigger picture of urban greening, urban agriculture can have significant impact on food security in cities.

The San Miguel Corporation Building at San Miguel Avenue, Ortigas Center, Pasig, Metro Manila, constructed 1975-1984 and considered to be one of Architect Francisco Mañosa's best projects. The San Miguel Corporation Headquarters takes its formal name from the Banaue rice terraces. If the



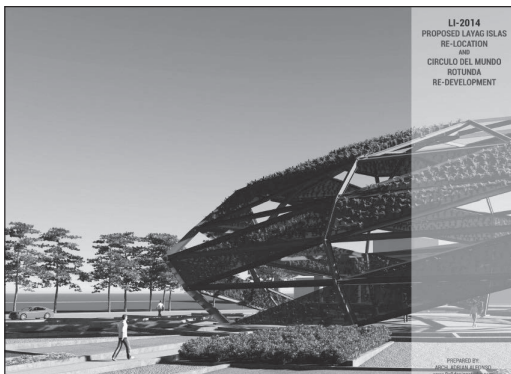
Edible plants in walls, in balconies etc.



San Miguel Corporation Building



Layag Islas designed by architect Adrian P. Alfonso  
Near Ninoy Aquino International Airport 3, Andrews Avenue, Pasay City, Metro Manila



Edible aesthetic landscape

building is retrofitted with edible aesthetic landscaping like lettuce, it will be the first and only vertical urban farm in the Philippines, and truly in spirit with the Banaue rice terraces.

In China, Belgian architect Vincent Callebaut designed "Asian Cairns" farmscrapers while Spanish architect Javier Ponce designed the vertical farm tower in a series of circular farm plots with viewing platforms. Edible plants are grown with the concept of hydroponics and rotated throughout the year according to the season.

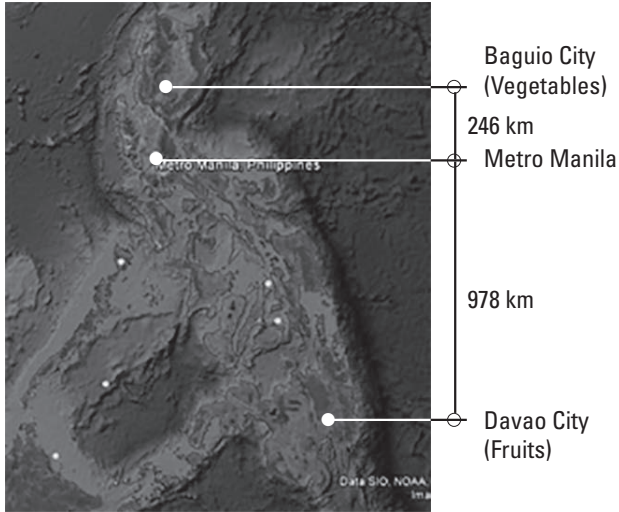
New forms of high-tech urban farming are emerging that will help other countries to pursue agriculture in architecture and in cities. As in Japan, they have tomatoes being grown in high-tech underground. Designer Natalie Jeremijenk proposes growing pods like cocoons or insect larvae for Tokyo's rooftops of skyscrapers that feed off the building's waste.

In Metro Manila and other developing Asian cities, we can create edible landscapes instead of ornamental landscapes in our public and private places.

Following the new concept of "Edible Aesthetic Landscapes," an urban agriculture that is planned and implemented following the principles of "Organic Farming" will make possible combined physical, physiological and psychic returns to Metro Manila and its people. To educate and encourage the government and citizens to plant edible plants in our cities which will visually enhance the city landscapes and functionally make food more available.

**Let us reintroduce food production in urban areas, as well as join the rest of the world in pursuing a shift to natural food systems.** The evolution of Manila from its early beginnings towards its growth into Metro Manila as it exists today was propelled by a combination of migration and administrative integration. This has resulted in the building up of green open spaces leaving the megacity fully dependent on food from distant sources **incurring huge cost of "food mileage."** The urban population of Metro Manila needs to be made aware that such food miles can be measured in the pollution that is caused that is detrimental to the environment.





Map of the Philippines with food mileage

The mileage of vegetables from Baguio is 246 km; garlic and tomato from the Ilocos, 402 km; fruits and vegetables from Cagayan Valley, 344 km; sugar, rice and mango from Central Luzon, 128 km; lanzones, coffee and dairy products from Calabarzon, 101 km; pineapple from Bicol, 355 km; bananas and durian from Davao, 978 km; cocoa from Surigao, 726 km. The aim is to develop urban agriculture at a viable level to reduce the impact of existing environmentally harmful total dependence on food mileage.

The success of any advocacy depends on how the people are motivated to rally support. In the promotion of organic urban agriculture for Metro Manila, certain statistics on health issues may generate quiet but determined initiatives.

**As a conclusion**, we should integrate the lessons in development that has led to the current situation that has made separate but coincident realizations of design professionals around the world that food security can be helped resolved through agriculture, in architecture, in cities. Simply stated, these lessons are:

1. Food cycles must be as simple and short both in time and space.
2. Use of artificial means, whether chemical or genetic, has led to disastrous harm to human health

3. Certain practices aimed at multiplying food production has led to environmental damage.
4. Diseases are related to food and select food can be cures for the most fatal ailments.
5. Creative landscaping can be edible and align with the positive aims of urban agriculture.
6. The advocacy of urban agriculture can only succeed if envisioned and implemented holistically.
7. The Philippines because of its generous sunlight, water, fertile soil, and hardworking creative people can spearhead urban agriculture in the context of the developing world.

It is my humble recommendation therefore that following the best incentive-driven practices in the world of developing spaces for agriculture in the cities backed by comprehensive research, that unifies standards for “Agriculture, in Architecture, in Cities” be developed for Metro Manila and other cities in Asia via multi-disciplinary, multi-agency, multi-institutional public-private cooperation among academic institutions, professional organizations, government agencies, non-governmental organizations, and corporate responsible businesses. These practices should be pro-actively discussed, formulated, tested, refined and eventually implemented to symbiotically to provide access to healthy food and protect ourselves and our environment from pollution and climate change. **Go Green!**

Thank you,  
Architect Maria Mynn  
Porciuncula-Alfonso



# Living Environment Evaluation of Japanese Residential Area in Kitakyushu Japan

## Part 1: Survey Result and Statistical Analysis

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都市により、地域により、文化度、安全性、便利さなどの環境は異なる。住民たちはそれをどう評価するか。アジアの都市作りの指針を探索する。

### Abstract

Diversity is something that cannot be avoided in our lives and it lives in harmony with us. It has become common in a community that there appear diversification in culture, norms or policy, and even people's daily lifestyle. With those personal senses, diversification of value as well as the abundance of lifestyles, people's preferences, demands, perceptions and evaluations in relation with their living environment are also becoming more and more diversified. For that reason, it is necessary to clarify this diversity of urban residential lifestyles and make an evaluation of residential environment. In the beginning of 2013, questionnaire surveys and subjective evaluations of residential environment were performed in order to grasp the main factors of residential environment of some districts in Kitakyushu City, Japan. First in this paper, the regional residential environment characteristics and personal residential preference were analyzed. In the second part of this paper, the evaluation using GIS (Geographical Information System) database will be conducted to analyze the existence of public facilities and area land use. Finally, the results can be applied to the residential environment planning, development, and policy monitoring of the Asian cities.

**Keywords** Lifestyle diversification; residential environment; satisfaction evaluation; questionnaire; Kitakyushu

### Introduction

Everyone in this world was born with different and unique personality. It has become common that in one community there are many kinds of diversification, such as in culture, norms and policy, and even daily lifestyle. On the other hand, residential environment quality is one of the main factors for quality of life, as well as the main support for the economic activities, culture and society. With the diversification of personal senses of value as well as the abundance of lifestyles, people's preferences, demands, and perceptions of their living environment are also

becoming more and more diversified so it is hard to grasp. Considering the positive relationship between residence and lifestyle, this study tried to elucidate the concept of residential lifestyles, especially from the perspective of its interrelation between residential choice, residential preference, and residential satisfaction.

Despite an increasing number of studies that many researchers have performed to evaluate residential environment, and some evaluation models and index systems have been presented on the evaluation of residential areas, only a few have paid attention to

the identification of the components that influence the degree of residential satisfaction, and the literature on residential lifestyles is not rich, especially in Asian societies.

A review of the literature indicated that the concept of residential satisfaction has been used in several methods. Moore<sup>1)</sup> has proposed four levels of theoretical construction in organizing and integrating studies of residential environment, which are conceptual orientation, framework, model and theory. Amerigo<sup>2)</sup> presented a theoretical and psychological approach to the study of residential satisfaction, and gave general view of relationships between people and their residential environment. Smith<sup>3)</sup> investigated the physical elements that contribute to the quality of community and established a framework for understanding the relationship between quality of urban environment and its physical form or design. While Bonaiuto and Bonnes<sup>4)</sup> also identified clusters of residents who use the city in different ways and who differ in their perceptions and evaluations of neighborhood attributes. In Japan, Morita<sup>5)</sup> developed environmental indices according to the urban resident's evaluation based on qualitative questionnaire and quantitative data of different aspects of the environment in some area of Kitakyushu. In China, Ge and Hakao<sup>6)</sup> developed a living environment evaluation model based on residential preferences and compared two big cities in the Chanjiang delta region.

In this research, through the case study of Kitakyushu City in Japan, questionnaire surveys and subjective evaluations on residential environment were performed, in order to grasp the main factors influencing the residential environment of local cities, and establish the suitable evaluation index system. The regional residential environment characteristics and types of personal residential preference were also analyzed, so that their influence on residential environment evaluation could be grasped. The results can be applied to the residential environment planning, construction and monitoring of other local cities in Asia such as Indonesia, Thailand, and Viet-

nam, effectively and efficiently.

The survey of residential environment evaluation in all Kitakyushu City was initiated in the beginning of 2013. As the first step, eight residential areas from Kitakyushu City were selected as sample areas, and some rudimental research was performed. On the basis of the rudimental results, the overall research of the whole of Kitakyushu City were carried out to establish the suitable evaluation index system and evaluation model while considering the regional characteristics and personal residential preference. (Fig. 1)

## Questionnaire Outline

The questionnaire survey was carried in all 8 residential areas (elementary school areas) of Kitakyushu City between December 2012 and January 2013. Altogether 4450 residents from the 8 residential areas and 7 districts of Kitakyushu City were selected due to the high number of students and were sent a questionnaire with cooperation of school teachers. Table 1 shows the sample numbers and response percentages for each residential area. The response percentages differed significantly across residential areas, ranging from 3.6% to 27.2%, and the overall response percentage is 23.1%. (Fig. 2)

Table 1 shows the main contents of the questionnaire survey, which is divided into five parts with a total of 88 questions.

**Table 1 Questionnaire Contents**

| Questionnaire Categories | Questionnaire Contents  | Question Number |
|--------------------------|---|-----------------|
| Housing Characteristic   | Family characteristic, house location, house type, house size, construction year;     | 8               |
| Lifestyle                | Public transportation choices, house stay hours, weekend activities, park activities; | 25              |
| Environment Evaluation   | Amenity, Safety, Health, and Convenience evaluation;                                  | 31              |
| Residential Preference   | Personal preferences concerning: Amenity, Safety, Health, and Convenience;            | 22              |
| Future Improvement       | Citizen needs, facilities development.  | 2               |

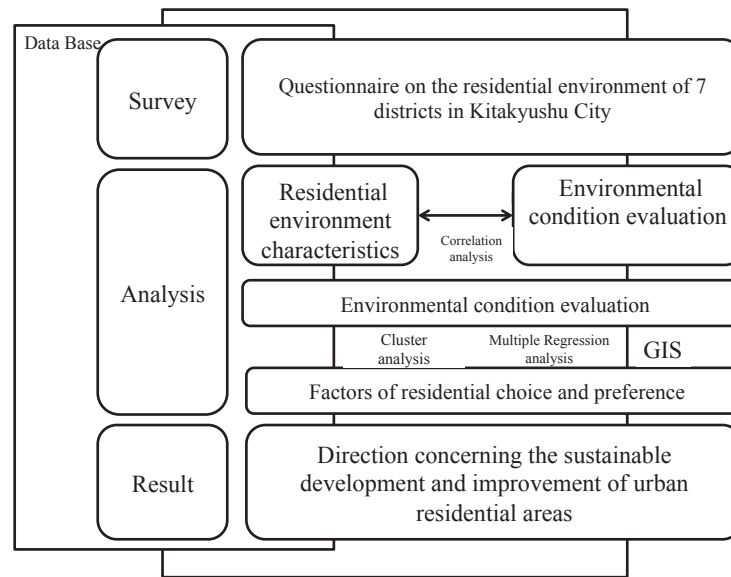


Fig. 1 Research Flow Chart

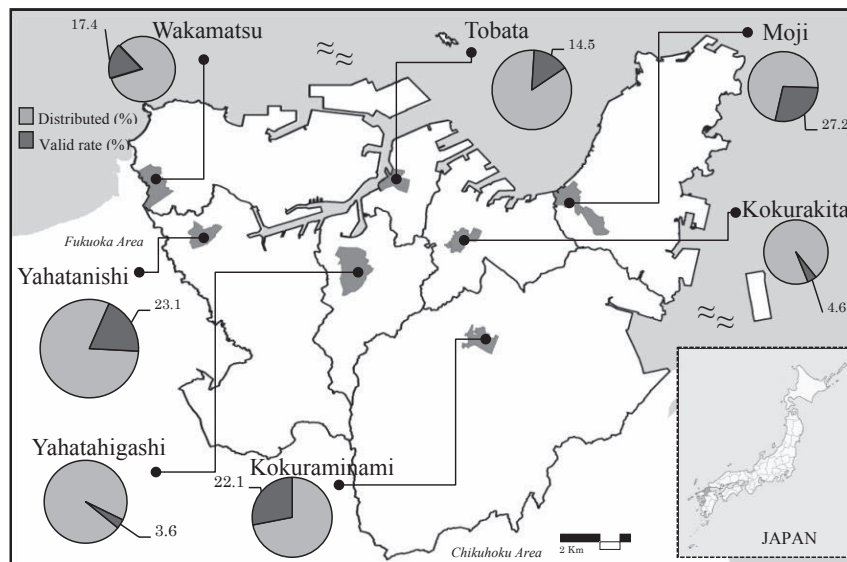


Fig. 2 Location and feedback number of investigated area in Kitakyushu

## Index System and Evaluation Model for Residential Environment

### (a) Hierarchical multi-attribute index system

At the beginning of 2013, 8 residential areas from 7 different districts in Kitakyushu City were selected

as sample areas, and a questionnaire survey was performed as the rudimentary research. Considering the regional properties of Kitakyushu City, such as the properties of nature, geography, culture, economy, transportation, and design factors, as well as the vari-



ance in personal life style of local cities which are quite different from big cities, 31 items on residential environment qualities were set up as questions in the survey. After the Principle Component Analysis on these items, 4 components were abstracted, which were convenience, amenity, health, and safety.

WHO (World Health Organization) defined health as “a complete state of physical, mental, and social well-being” and in accordance four concepts of residential environment to satisfy the basic living requirements of human beings were first presented in 1961, which are safety, health, convenience and amenity. Then the hierarchical multi-attribute index system and evaluation model were established in 4 levels, described in Fig. 3. The attributes of each level were designed on the basis of the principle component analysis finished by the rudimental research, as well as considering the residential concepts present by WHO.

According to this index system, “satisfaction with residential environment” (stage 1) depends on satisfaction with “convenience,” “amenity,” “safety,” “health” and “community” (stage 2). Attributes of stage 2 are assumed to depend on satisfaction with nine stage 3 attributes. For example, “amenity” (stage 2) is assumed to depend on “A1” (amenity with natural environment), “A2” (amenity of open space), and “A3” (amenity of neighborhood) which is included in stage 3. Furthermore, each of the 12 attributes of stage 3 is decomposed into some lower level attributes in stage 4. For instance, “C2” of stage 3 (convenience of daily life) is assumed to depend on 2 attributes of stage 4, such as “convenience for accessing bus,” and “convenience for accessing train.”

### (b) Evaluation results

Table 2 shows the personal attributes and residential conditions of the 7 districts respectively. The family member of the survey subject is mostly 4- 5 persons per house and the age range is mainly from the 30s to 40s. House type are dominated by multiple apartment overall but in some district detached house

number is higher. Other residential conditions such as floor space and years of residence are also shown in Table 2 below.

**Table 2 Questionnaire Results on Residential Environment Condition**

| Item/Category  | YH       | YN | KK | KM | TB | WM | MJ |
|----------------|----------|----|----|----|----|----|----|
| Family Size    | ~3       |    |    |    |    |    |    |
|                | 4~5      |    |    |    |    |    |    |
|                | 5~       |    |    |    |    |    |    |
| House Size     | ~50      |    |    |    |    |    |    |
|                | 50~100   |    |    |    |    |    |    |
|                | 100~150  |    |    |    |    |    |    |
|                | 150~300  |    |    |    |    |    |    |
|                | 300~     |    |    |    |    |    |    |
| House Type     | Detached |    |    |    |    |    |    |
|                | Multiple |    |    |    |    |    |    |
| Residence Year | ~5       |    |    |    |    |    |    |
|                | 5~10     |    |    |    |    |    |    |
|                | 10~20    |    |    |    |    |    |    |
|                | 20~      |    |    |    |    |    |    |
| Household Age  | 20s      |    |    |    |    |    |    |
|                | 30s      |    |    |    |    |    |    |
|                | 40s      |    |    |    |    |    |    |
|                | 50s~     |    |    |    |    |    |    |

| Stage 1   | Stage 2     | Stage 3                           | Stage 4 |
|---|-------------|-----------------------------------|---------|
| Comprehensive Evaluation of Residential Environment | Amenity     | A1 Amenity of natural environment | 1       |
|   |             | A2 Amenity of open spaces         | 2       |
|   |             | A3 Amenity of neighborhood        | 2       |
|   | Safety      | S1 Safety from crime              | 4       |
|   |             | S2 Safety in mobility             | 4       |
|   |             | S3 Safety from disaster           | 3       |
|   | Health      | H1 Health of water                | 1       |
|   |             | H2 Health of sound                | 2       |
|   |             | H3 Health of air                  | 2       |
|   | Convenience | C1 Convenience of daily life      | 3       |
|   |             | C2 Convenience of transportation  | 2       |
|   |             | C3 Convenience of public service  | 5       |

**Fig.3 Evaluation Method on Residential Environment**

On-site residents were asked to evaluate their present residential situation with respect to residential satisfaction on multi-attributes. Evaluations

**Table 3 Evaluation Results on Residential Environment**

| Area            |      | Stage 1                    | Stage 2 |        |        |             |
|-----------------|------|----------------------------|---------|--------|--------|-------------|
|                 |      | Comprehensive satisfaction | Amenity | Safety | Health | Convenience |
| Yahatanigashi   | Mean | 0.67                       | 1.06    | -0.12  | 0.97   | 1.45        |
|                 | S.D. | 0.92                       | 1.00    | 1.14   | 0.95   | 0.79        |
| Yahatanishi     | Mean | 0.52                       | 0.82    | -0.02  | 0.69   | 0.91        |
|                 | S.D. | 1.09                       | 1.07    | 1.13   | 1.13   | 0.99        |
| Kokurakita      | Mean | 0.98                       | 1.04    | 0.02   | 0.96   | 1.26        |
|                 | S.D. | 0.80                       | 0.92    | 1.11   | 1.01   | 0.85        |
| Kokuraminami    | Mean | 0.71                       | 1.09    | -0.12  | 0.91   | 1.11        |
|                 | S.D. | 0.97                       | 0.85    | 1.11   | 0.96   | 0.79        |
| Tobata          | Mean | 0.32                       | 0.35    | -0.08  | 0.66   | 1.23        |
|                 | S.D. | 1.04                       | 1.19    | 1.11   | 1.04   | 0.90        |
| Wakamatsu       | Mean | 0.91                       | 1.20    | 0.18   | 0.97   | 0.65        |
|                 | S.D. | 0.78                       | 0.83    | 1.04   | 0.93   | 1.06        |
| Moji            | Mean | 0.69                       | 1.08    | -0.11  | 1.05   | 1.14        |
|                 | S.D. | 1.02                       | 1.00    | 1.14   | 0.85   | 0.85        |
| Kitakyushu City | Mean | 0.66                       | 0.94    | -0.03  | 0.86   | 1.03        |
| (Total)         | S.D. | 0.99                       | 1.02    | 1.11   | 1.00   | 0.94        |

were given in terms of satisfaction degree elicited from “very much” (2 score) to “not at all” (-2 score). Through the survey, residential environment situation evaluated by residents all over Kitakyushu City can be grasped.

The mean scores and standard deviations of attributes of stage 1 and stage 2 are presented in Table 3, which indicate the degree of satisfaction with various residential attributes. It can be seen that the overall evaluation of residential environmental quality in terms of “satisfaction with residential environment” revealed that residents were fairly satisfied with the quality of residential environment, with the average score (standard deviation) of 0.66 (0.99), which is close to the midpoint of the point scale (0.00). The scores of amenity, safety, health, and convenience are 0.94 (1.02), -0.03 (1.11), 0.86 (1.00), and 1.03 (0.94), respectively.

#### (c) Hierarchical multi-attribute evaluation model

The relative importance of each residential attribute is assessed by means of multiple regression analysis to find the main factors influencing the residential environment evaluations of Kitakyushu. Evaluations of higher-level attributes were regressed on the

evaluations of the lower-level attributes. The relative importance of various residential attributes can be revealed in terms of coefficient  $b$  shown in Table 4.

It shows that 80.7% of the variance in the assessment of “residential satisfaction” (stage 1) can be explained by the four stage 2 attributes. Satisfaction with “amenity” appeared to be the most important attribute ( $R^2=0.807$ ), then come the attributes of satisfaction with “health,” “safety” and “convenience” ( $R^2=0.755$ ,  $R^2=0.694$ ,  $R^2=0.615$ ). Three attributes A1, A2 and A3 (stage 3) can explain 70% of the variance in satisfaction with amenity.

Amenity of “neighbourhood” appears more important than amenity of “natural environment” and “open space.” The three stage 3 attributes H1, H2, and H3 appears to explain 75.5% of the variance in satisfaction with “health” (stage 2), in which health of “sound” seems to be much more important than “air” and “water.” As to the satisfaction with safety (stage 2), the three attributes S1, S2, and S3 (stage 3) can explain about 69.4% of the variance, in which safety of “disaster” seems more important than safety in “mobility” and “crime.”

From the above analysis, it may also be noted that the model fitness ( $R^2$ ) is quite high, which is indicat-

**Table 4 Multiple regression analysis result**

|  |  |  |             |  |                        |                        |    |   |
|--|--|--|-------------|--|------------------------|------------------------|----|---|
| Stage 1  |  |  | Stage 2     |  |                        | Stage 3                |    |   |
| <div>Satisfaction<br/>on<br/>residential<br/>environment</div> |  |  | Amenity     |  | R <sup>2</sup> = 0.807 | A1                     |    | <div>S1</div> <div>S2</div> <div>S3</div> <div>C1</div> <div>C2</div> <div>C3</div> |
|  |  |  | Safety      |  |                        | R <sup>2</sup> = 0.694 | A2 |   |
|  |  |  | Health      |  | R <sup>2</sup> = 0.755 |                        | A3 |   |
|  |  |  | Convenience |  |                        | R <sup>2</sup> = 0.615 | H1 |   |
|  |  |  |             |  |                        |                        | H2 |   |
|  |  |  |             |  |                        | H3                     |    |   |
|  |  |  |             |  |                        |                        |    |   |

|               |  |                        |
|---------------|--|------------------------|
|               | Regression equation                          | R square               |
| Comprehensive | Y= 0.229A + 0.209S + 0.190H + 0.139C + 0.667 | R <sup>2</sup> = 0.807 |
| Amenity       | Y= 0.439A3 + 0.224A1 + 0.235A2 + 0.410       | R <sup>2</sup> = 0.700 |
| Safety        | Y= 0.451S3 + 0.383S2 + 0.204S1 · 0.108       | R <sup>2</sup> = 0.694 |
| Health        | Y= 0.482H2 + 0.317H3 + 0.177H1 + 0.085       | R <sup>2</sup> = 0.755 |
| Convenience   | Y= 0.420C2 + 0.262C3 + 0.337C1 · 0.025       | R <sup>2</sup> = 0.615 |

**Table 5 Principal Component Analysis\***

| Variance Factor                                  | Component    |              |              |              |            |
|--|--------------|--------------|--------------|--------------|------------|
|  | 1            | 2            | 3            | 4            | 5          |
| 1. Convenience of shopping                       | 0.287        | -0.059       | <b>0.567</b> | 0.016        | 0.318      |
| 2. Convenience of commuting                      | 0.071        | 0.039        | <b>0.82</b>  | 0.12         | -0.016     |
| 3. Nearby the workplace                          | -0.042       | 0.218        | <b>0.739</b> | 0.04         | -0.106     |
| 6. Beauty of nature                              | 0.461        | <b>0.597</b> | 0.123        | -0.211       | -0.061     |
| 7. Beauty of city/town                           | <b>0.546</b> | <b>0.61</b>  | 0.044        | -0.163       | -0.119     |
| 8. Noise and air quality of outdoor              | <b>0.74</b>  | 0.181        | 0.046        | -0.024       | -0.1       |
| 9. Sunshine and ventilation are good             | <b>0.615</b> | 0.036        | 0.122        | 0.201        | 0.038      |
| 10. Safety from disaster is high                 | <b>0.681</b> | 0.143        | 0.153        | 0.027        | 0.108      |
| 11. Nearby the parent's house (independent)      | 0.103        | 0.161        | -0.001       | -0.029       | <b>0.8</b> |
| 12. Security of crimes is good                   | <b>0.722</b> | 0.026        | 0.05         | 0.114        | 0.149      |
| 13. Safety of walking, bicycle, and car are high | <b>0.674</b> | 0.102        | 0.147        | 0.164        | 0.305      |
| 15. Cleanliness is high                          | <b>0.636</b> | 0.294        | 0.019        | 0.178        | 0.126      |
| 16. Social connection is good                    | 0.285        | <b>0.578</b> | 0.039        | 0.14         | 0.212      |
| 17. Educational environment is good for children | <b>0.548</b> | 0.22         | 0.028        | 0.138        | -0.045     |
| 18. Economic reason (house price and rent)       | 0.182        | -0.022       | 0.1          | <b>0.726</b> | 0.086      |
| 19. House design is good                         | 0.171        | 0.209        | 0.077        | <b>0.777</b> | -0.066     |
| 20. Good for leisure                             | 0.062        | <b>0.685</b> | 0.184        | 0.33         | 0.181      |
| 21. There is inner attachment                    | -0.002       | <b>0.591</b> | 0.155        | 0.113        | 0.492      |

Extraction Method: Principal Component Analysis.  
Rotation Method: Varimax with Kaiser Normalization.

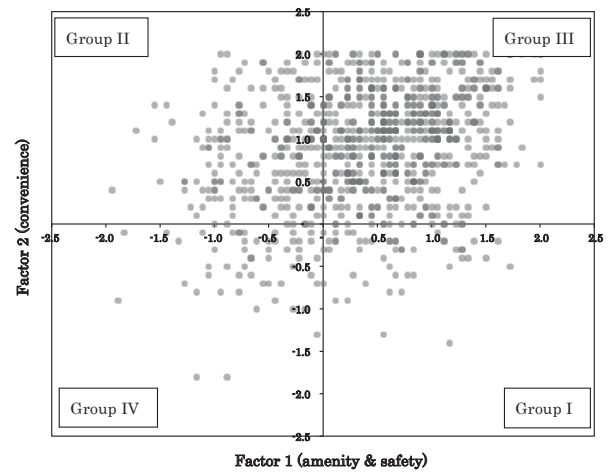
\*Factor with lower than 0.5 value were eliminated in the table

| Principal Component | Initial Eigen-values | % of Variance | Cumulative % |
|---------------------|----------------------|---------------|--------------|
| 1                   | 6.28                 | 29.93         | 29.93        |
| 2                   | 1.76                 | 8.37          | 38.29        |
| 3                   | 1.43                 | 6.79          | 45.09        |
| 4                   | 1.27                 | 6.03          | 51.13        |
| 5                   | 1.04                 | 4.96          | 56.08        |

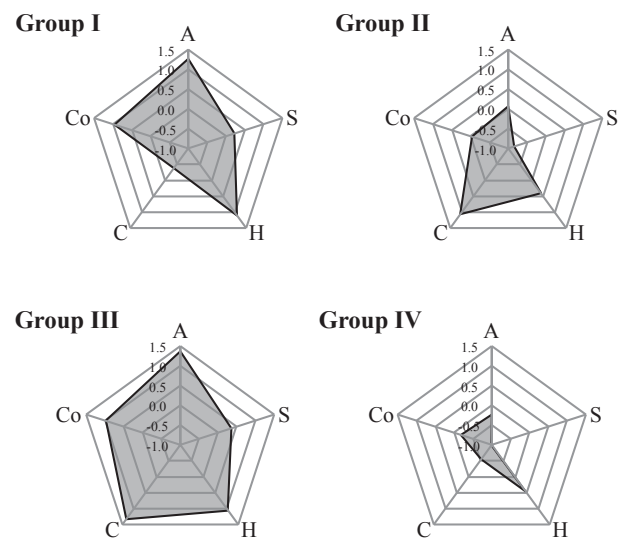
explain about half of the contribution of the total factors) of each resident is plotted in figure 4, the X-axis is the 1st factor (amenity + safety); Y-axis is the 2nd factor (convenience). Thus, 4 group patterns can be identified, which are Group I (amenity and safety type); Group II (convenience type); Group III (comprehensive type: amenity+safety+convenience) and Group IV (other type). (Fig. 4, Table 6)

### (c) Analysis of group characteristic

In order to understand the characteristics of each group, the satisfaction scores and importance (preference) scores from 4 types of group were analyzed, as shown in Tables 6 and 7. Each group characteristic is presented based on these two judgments (satisfaction type and preference type).

**Fig. 4 Scatter Plot of component value of factor 1 and 2****Table 6 Residential preference group**

| Group pattern | Number | Percentage (%) |
|---------------|--------|----------------|
| I             | 61     | 6.55           |
| II            | 226    | 24.27          |
| III           | 582    | 62.51          |
| IV            | 62     | 6.66           |
| Total         | 931    | 100            |

**Fig. 5 Group characteristic upon satisfaction type**



**Group I: Amenity and safety type**

The evaluation on satisfaction and importance of the amenity attribute are both quite high among all types, much higher than the comprehensive score of total samples. The same tendency can be noted in the case of the safety attribute, where importance evaluation is above average, and the satisfaction evaluation is the highest among the 4 types. On the other hand, the evaluation of convenience is the lowest among all types, which may illustrate the difficulty in pursuing the satisfaction with amenity, safety and convenience simultaneously. Families in group I regard amenity and safety as their first preference, and this seems to have been realized, while the aspect of convenience is compromised.

**Table 7 Evaluation on residential satisfaction by group**

| Satisfaction type | I     | II    | III  | IV    |
|-------------------|-------|-------|------|-------|
| A) Amenity        | 1.26  | 0.06  | 1.37 | -0.23 |
| S) Safety         | 0.23  | -0.85 | 0.36 | -1.02 |
| H) Health         | 1.10  | 0.41  | 1.06 | 0.45  |
| C) Convenience    | -0.38 | 1.07  | 1.33 | -0.55 |
| Co) Comprehensive | 0.97  | -0.04 | 0.98 | -0.18 |

**Group II: Convenience type**

This type is focused on convenience, and the evaluation of convenience importance is the highest. It is also shown that the satisfaction evaluation of convenience is quite high, much higher than average. The importance of evaluation of amenity and safety are the lowest, and satisfaction with amenity and safety are also quite low among 4 types, much lower than the average.

Similar to group I, group II chooses convenience as the most important factor on dwelling, and in consequence their requirement on amenity and safety are given up to some extent.

**Group III: Comprehensive type**

The importance evaluation of amenity, health, and safety are highest among all types, and the importance evaluation of convenience is also high. In

addition, their satisfaction with convenience, amenity, health and safety rank the first among all types. It can be seen that their comprehensive wishes for living condition are realized to the largest extent, which is also the target of residential environment plan and design. Also the number of this group is the highest as 582 residents, among all the residents, the percentage of this group is largest (62.51%).

**Table 8 Evaluation on residential preferences by group**

| Preferences type                             | I     | II    | III   | IV    |
|--|-------|-------|-------|-------|
| P1) Convenience of shopping                  | 1.02  | 1.46  | 1.56  | 0.97  |
| P2) Convenience of commuting                 | 1.02  | 1.17  | 1.30  | 1.06  |
| P3) Nearby the workplace                     | 0.10  | 0.19  | 0.26  | 0.02  |
| P4) Convenience of children going to school  | 1.49  | 1.59  | 1.64  | 1.06  |
| P5) Access to neighbor city is good          | 0.52  | 0.77  | 0.90  | 0.42  |
| P6) Beauty of nature                         | 0.67  | 0.38  | 0.74  | 0.06  |
| P7) Beauty of city                           | 1.03  | 0.34  | 0.76  | 0.03  |
| P8) Noise and air quality of outdoor         | 1.48  | 1.14  | 1.39  | 0.87  |
| P9) Sunshine and ventilation are good        | 1.5   | 1.57  | 1.57  | 1.24  |
| P10) Safety from disaster                    | 1.23  | 1.20  | 1.34  | 0.73  |
| P11) Nearby the parent's house (independent) | 0.33  | 0.56  | 0.55  | 0.45  |
| P12) Security from crimes                    | 1.57  | 1.54  | 1.70  | 1.40  |
| P13) Safety of walking, bicycle, and car     | 1.33  | 1.26  | 1.39  | 0.97  |
| P14) Medical and welfare services is easy    | 0.87  | 1.08  | 1.06  | 0.44  |
| P15) Cleanliness is high                     | 1.21  | 1.19  | 1.29  | 1.03  |
| P16) Social connection is good               | 0.49  | 0.12  | 0.48  | 0.24  |
| P17) Education for children                  | 1.43  | 1.15  | 1.43  | 0.98  |
| P18) Economic reason                         | 1.11  | 1.15  | 1.25  | 1.10  |
| P19) House design                            | 0.85  | 0.99  | 1.12  | 0.66  |
| P20) Good for leisure                        | -0.28 | -0.37 | -0.12 | -0.34 |
| P21) There is inner (special) attachment     | -0.51 | -0.04 | 0.08  | -0.56 |

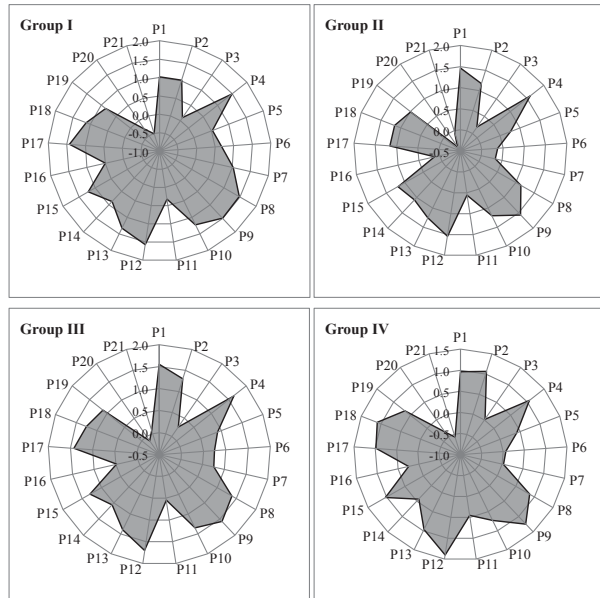


Fig. 6 Group characteristic upon preference type

#### Group IV: Other type

The preference emphasized other factors instead of amenity, safety and convenience. As we see in Table 7 and Table 8, the evaluation on satisfaction and importance with 4 satisfaction factors are all very low, while convenience is the lowest, and other 3 factors tend to be low. The comprehensive satisfaction in residential environment is also the second lowest. The reason may be related to their unclearness of residential preference. The residential environment condition of this type is also worth being studied, in order to improve their residential environment, as well as their residential awareness.

## Conclusions

The following conclusions can be drawn from the above research:

(1) The present residential environment situation evaluated by on-site residents can be grasped throughout Kitakyushu City, as well as the regional characteristics and the influence on residential environment evaluation, which can be served as the database for the urban planning and decision-making.

(2) Hierarchical multi-attribute index system of residential environment evaluation considering local city properties was developed, and the relative importance of each attribute was also studied according to multiple regression analysis. The study of model fitness shows that the evaluation system developed in this study has captured most attributes that underlie residential environment and can offer a promising and valuable theoretical framework for the evaluation of residential environmental quality.

(3) Four groups of personal residential preference types are identified and their influences on residential environment evaluation are also studied.

Further, the objective attributes of residential environment and lifestyle could also be analyzed by GIS in the next part of this paper.

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# Cultural Farming Practices of Indigenous Cultural Communities: The Case of T'boli Farmers in Lake Sebu, South Cotabato, Philippines

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原住民たちの農法にもその良さがある。  
伝統的な農法と現代的なものを組み合  
わせることがベストなのだ。それは古  
来の文化を保存することでもある。

## Abstract

This study aimed to analyze the farming practices of T'boli rice and corn farmers in Lake Sebu, South Cotabato, Philippines. Through key informant interviews, focus group discussion, and other personal communications, data were collected primarily from T'boli rice and corn farmers, extension workers, and community leaders. Data were analyzed qualitatively.

Results show that T'boli farmers practice indigenous farming practices and belief systems side by side with modern ones. For instance, intercropping indigenous crops for consumption and hybrid crops as cash crops and combining the use of indigenous and modern tools are a common practice.

Findings also show that use of cultural practices has its benefits as farmers are able to appreciate their heritage while adopting modern practices. Farmers believed that merging indigenous and modern farming knowledge could bring about farming practices that are suitable to their capacities and needs. However, findings also show that the younger generation is no longer knowledgeable of their indigenous farming knowledge and practices.

Recognizing the reflexivity of the learning systems of farmers calls for more participatory extension practices where farmer experimentation showing indigenous and modern farming practices should be emphasized. Likewise, efforts to record these agricultural indigenous knowledge and farming practices should be undertaken as a contribution to ensuring preservation and appreciation of their culture.

**Keywords** Indigenous knowledge, indigenous farming, indigenous peoples, extension

## Introduction

According to the International Work Group for Indigenous Affairs (n.d.), indigenous peoples (IPs) are estimated to comprise some 10 percent or around 9.40 million of the Philippines' projected population. Also called indigenous cultural communities, IPs are not only carriers of a rich cultural heritage but are also sources of invaluable knowledge.

One indigenous cultural community in the Philip-

pines is the T'boli tribe of Lake Sebu, South Cotabato. Because of geographical barriers, inadequate means of communication, and less advanced infrastructure, the T'bolis managed to remain autonomous when Islam reached the lower valleys of Mindanao. Even the Spanish colonization failed to influence the way of life of the T'bolis (MPDO, 2010).

T'bolis live in an ancestral domain blessed with natural resources. Despite such blessings, they



often face development problems such as poverty, discrimination, and marginalization. Consequently, many T'boli families lose their land in their struggle to meet their daily needs (ILO, n.d.).

Globalization may be to blame for the development problems of the T'bolis. The current phase of globalization, which is underpinned by neo-liberal economics and liberal political theory, has increased the risks and vulnerabilities of IPs. As a result, many of these IPs have remained poor and marginalized (Tauli-Corpuz, 2010).

There are more than 300 million IPs in the world. While these IPs make up fewer than 5 percent of the global population, they account for about 10 percent of the world's poor (Patrinos, 2010). It is a common generalization that Third World poverty falls heavily on ethnic minorities and IPs (Todaro & Smith, 2004, as cited in Grande, 2008).

With the presence of local and international organizations that help IPs improve their lives, it is assumed that modern knowledge has already infiltrated these indigenous cultural communities. Thus, it would be interesting to look at the co-optation of indigenous and modern agricultural farming practices among T'boli farmers in an effort to improve extension services and, consequently, agriculture in Lake Sebu.

According to David (2010), international science communities have already acknowledged the partnership of indigenous and external knowledge and research. It has been argued that indigenous knowledge (IK) provides effective alternatives to western knowledge. Instead of considering only western technologies, local people and development workers may choose IK or combine it with western technology (Mathias, 2000).

In the Philippines, many technology transfer and agricultural extension efforts were unsuccessful, because they failed to launch from where the local people are in terms of their knowledge system, skills, preferences, and ways of perceiving and doing things (Serrano, 1997, as cited in Seco, 2000). To improve the benefits of development assistance, the develop-

ment community is encouraged to find ways to learn about indigenous institutions and practices and where needed adapt modern techniques to local practices (World Bank, 1998). The World Bank asserts that investing in the exchange of IK and its integration into assistance programs can help reduce poverty.

This study aimed to analyze the cultural farming practices of T'boli farmers in Lake Sebu, South Cotabato. This study may be used to enrich the literature on IK and its collaboration with agricultural science. Roling and Engel (1991), as cited in Scoones and Thompson (1994), acknowledge the importance of exploring the transmission and transformation of local knowledge in extension practice. It has been argued that managing IK may strengthen and sustain local institutions and capacities (Marsden, 1994).

## Methodology

As indicated in related literature, qualitative research design is more appropriate in studies exploring IK and its partnership with external knowledge (Akullo, Kanzikwera, Birungi, Alum, Aliguma, & Barwogeza, 2007; Singh & Sureja, 2006). Hence, the case study research design was used. Creswell (2007) views a case study as a methodology "in which an investigator explores a bounded system (a case) or multiple bounded systems (cases) over time through detailed, in-depth data collection involving multiple data sources." For this study, the researcher focused on the T'boli rice and corn farmers and their indigenous and modern farming practices. Data were gathered from various sources.

To answer the research problems, personal experiences of the research participants were explored. Byrne (2001) explains that truth and understanding can emerge from people's life experiences. Thus, T'boli farmers and other stakeholders were interviewed.

The farmers are full-blooded T'bolis with a farm area of at least one hectare. In each *barangay*, about three to five farmers served as key informants. Interviews were conducted until the responses of the farm-

ers were already similar and sufficient to describe their case. A total of 18 farmers were interviewed.

The municipal agriculturist, the agricultural technologist in-charge with rice, and the agricultural technologist in-charge with corn—all from the Municipal Agriculture Office (MAO) of Lake Sebu—acted as key informants, as well.

The Municipal Tribal Council (MTC) of Lake Sebu, two former Lake Sebu mayors, and the two local research guides also served as research participants through focus group discussion (FG), key informant interviews, and informal discussions, respectively. Moreover, the researcher herself is a major source of information through the field observations made.

Interviews were transcribed and translated, transcriptions read thoroughly, and clusters of meanings or themes identified. Based on the themes surfaced, assumptions and conclusions regarding the cultural farming practices of the T'bolis were made.

## Results and Discussion

Though many farmers have already adopted modern farming practices, research participants revealed that they still respect and follow some of their indigenous farming practices. It was also observed that some farmers adapted their cultural beliefs to modern times. Farmers thus end up merging the old and the new, developing farming practices that are considered more progressive and at the same time easier to use, practical, appropriate, and culturally sensitive.

**Pre-planting.** In modern farming, farmers do not practice rituals or offerings. However, in Christian tradition, which the T'bolis have embraced, asking for grace and thanking God is taught. Thus, evident among the T'boli farmers is an overlap of their indigenous practice of *demsu* and the relatively modern teachings of the church. *Demsu* is a ritual wherein the farmer offers *kefilan* (sword), *kegal nesif* (T'boli clothing), and *malong* (handwoven cotton cloth) and prays to *fun koyu* (the god of the forest or trees), *fun*

*tonok* (god of the soil), and *fun el* (god of water).

Though some of the old farmers still practice *demsu*, most of the farmers interviewed said they no longer practice the ritual. Instead, they pray or make offerings in church. The essence of *demsu* is still there—praying for bountiful harvest and good health; however, the farmers now pray directly to one God. Sabang Kala who used to practice *demsu* said: “You just pray; you no longer do the ritual.” Eding Sukan shared that even until now they offer—but in church. “When you go to church, you have to offer something, so you would have something to plant again.”

Nevertheless, the farmers said they would never forget their rituals, and if they want, they could still practice them. Eding Sukan added: “[Our traditions] are the legacy of our ancestors.” Fulfilling their traditions may even result to better harvest, according to Badoy Langgong. Hence, some farmers like Lita Singkan still practice the T'boli tradition of having a feast before planting.

The feast, however, is no longer grand, unlike those during the time of their early ancestors. Lita Singkan and her husband said they prepare a small feast for their family and those who would plant for them. Lita Singkan said she prepares the feast for her family and laborers in the morning before they start planting. “I cook rice, tilapia, and whatever is available like cassava.”

With regard to schedule of planting, some farmers are still guided by the moon, opting to plant during the full moon as it has been proven to give better harvest. However, they now consider as well their available capital and the market prices of rice and corn. When the prices are or projected to be high and there is available capital, farmers like Floro Tony prepare immediately for planting. It could be noted then that co-optation is done to ensure good harvest, improve productivity, and, ultimately, increase income.

**Land Preparation.** Even if there is already a *dadu* (plow), farmers still use the *sangkol* when cultivating areas that could not be reached by

the *dadu*. Also, women corn farmers still use the *sokbong* for cutting grass when weeding. The *sokbong* is handier than the *kongo* or *bolo* (large jungle knife) or the *klo* or *pisaw* (knife with metal handle) that male farmers opt to use nowadays, presumably for ease of use. In the earlier days, T'boli farmers used the *bangkong*, a metal sword that is bigger and heavier than the hand tools that farmers use nowadays.

Meanwhile, part of the indigenous farming practices of the farmers is leaving organic material on the soil to make the soil more fertile. Thus, when farmers plow the field using the *dadu*, they combine organic material such as dried leaves—a practice they have inherited from their ancestors.

Tony Gek, for example, uses the dried rice stalks. He shared: “If you leave the rice stalks there in the rice field, they would rot and would fertilize the soil.” Thus, when Tony Gek uses the thresher, the following day, he scatters the rice stalks all over the rice field. “Then the next day, you can already plow the field. You mix the rice stalks with the mud.”

By combining the best attributes of the indigenous and modern farming practices in land preparation, the farmers were able to make their work less strenuous. Moreover, their expenses for fertilizers were minimized.

**Planting.** In earlier times, T'boli farmers planted different indigenous varieties of upland rice: *halay alang*, *halay awot*, *halay bukay*, *halay goling*, *halay himales*, *halay hitem*, *halay katumbil*, *halay kenumay*, *halay lemobong*, *halay malabod*, *halay sendangan*, *halay teng*, *hulut delong*, and *hulut fenandi*. “Halay” is the T'boli term for *palay* or rice, while “hulut” refers to the *pilit* or sticky rice. Wayne Qugan, one of the oldest farmers in their *barangay* (village), said *halay sendangan* and *halay teng* also had *pilit* versions. However, all of these indigenous varieties have disappeared. Nowadays, farmers plant native and hybrid varieties introduced by settlers and the MAO.

Meanwhile, there was only one indigenous corn variety mentioned that is indigenous to Lake Sebu:

*kesila taho*, a *pilit* variety. It is sticky and can be used as a substitute for rice. Its kernel is a combination of white and violet. The two other traditional corn varieties, *masipag* and *tinigid*, are native white corn and were introduced by settlers.

Intercropping is an indigenous farming practice among T'bolis. Crispin Salif said: “You plant rice first, and then corn. That’s how my father did it... When the rice is already high, you can plant *pilit* (sticky) corn in the middle of the rice. But the rice and corn should be apart [so as not to hinder the growth of rice].”

Intercropping was observed to maximize the use of land and to have more harvest. It is expected that the rice and corn would be ready for harvest at the same time. It only takes 60 to 65 days to harvest *pilit* corn, according to Lake Sebu municipal agriculturist Zaldy Artacho.

However, due to their limited resources, farmers are unable to plant both hybrid rice and hybrid corn at the same time. Hence, Alejandro Fitan supplements his rice production with native corn production. Partnering hybrid rice with low maintenance native corn could help optimize the earnings of the farmer. On the other hand, Ufing Uga mentioned planting native white corn or hybrid yellow corn for marketing, and planting *pilit* (sticky) corn for consumption.

As a result, farmers are able to maximize their available resources and improve their agricultural productivity. Such results could also be observed in combining the indigenous practice of mixed cropping to the modern practice of contour farming.

Mixed cropping is an indigenous farming practice common among T'bolis. Aside from rice and corn, T'bolis are known to plant a variety of other crops—from root crops to fruit bearing trees. Mixed cropping provides farmers with something to eat while waiting for their harvest. Planting different crops also complements contour farming, which entails strip cropping wherein strips of corn are alternated on the side of a hill with strips of denser vegetation such as the cassava that farmers often plant.

**Nutrient Management.** To keep the soil fertile, some farmers use inorganic fertilizers like urea and triple super phosphate; however, many have reverted to the use of organic fertilizers. It should be remembered that even before the coming of the settlers and Santa Cruz Mission, T'boli farmers were already using banana leaves, together with other leaves and twigs, to fertilize the soil. Now, however, they also use other organic fertilizers like animal manure.

Reverting to the use of organic fertilizers may be attributed to the high cost of chemical fertilizers and to the harmful effects of excessive use of these chemical fertilizers. Nevertheless, there are farmers who still rely on chemical fertilizers, but they supplement them with organic fertilizers to lessen expenses.

**Water Management.** Looking at the terraces of the T'bolis, one would notice the trees planted around the terraces. The presence of these trees around the terraces could be regarded a co-optation of indigenous and modern farming practices.

Planting trees to prevent soil erosion is an indigenous farming practice among T'bolis. On the other hand, the terraces are a modern technology that allows farmers to have paddies in upland areas and maximize spring water. By planting trees, farmers are ensured that their terraces would not erode. It could thus be assumed that co-optation perhaps occurs because farmers find the combined practices useful.

Aside from planting trees and permanent crops, upland corn farmers also make canals to prevent soil erosion. Badoy Langgong said: "You have to put a waterway, so [when it rains] the water would not flood the field." Both practices were noted to be effective; thus, combining these indigenous and modern farming practices could make water management more effective.

**Pest Management.** Farmers continue to adopt their indigenous belief that their area should be clean to ensure good growth of crops and avoid pests. A com-

bination of indigenous and modern farming tools is used for weeding corn areas: the *bangkong*, *sokbong*, *kelo*, and *klo*. Instead of the *klo*, rice farmers use the *garab* with their indigenous tools. In addition, they use herbicides. Nene Tuan shared: "First you clean the sides of your plot. Then, you spray."

Also, some farmers still believe in prayers and *anting-anting* to combat pests. They still make traps, as well. But farmers supplement these indigenous practices with the use of pesticides. Thus, though rice farmer Jovanie Salif has his *anting-anting* to keep away the rats, he also buys poison. During the interview, the farmer said: "As I have told you earlier, nowadays, our practices are combined." Other farmers like Julises Panes even practice crop rotation.

Furthermore, it was noted that among the modern tools, none were actually designed specifically for women. Thus, the indigenous tools for women are still popular among farmers. Meanwhile, the *anting-anting* (amulet) may be preferred due to minimize costs if there are any; however, farmers use poison, as well, perhaps for additional peace of mind. It could also be that the poison is expensive for farmers, so they supplement it with their *anting-anting*.

**Harvesting.** A combination of indigenous and modern practices is likewise used when harvesting rice and corn. For example, even if corn farmers harvest their corn exactly 105 days after planting, they still use an indigenous tool in dehusking: the *blis*. Made from bamboo, the *blis* is a small hand tool with a pointed tip.

It was also observed that upholding traditions and cultural values are still evident among T'bolis. This shows that T'boli traditions and values could not be separated completely from their farming practices even if farmers have adjusted to the times and have become more practical.

For instance, though the practice of *kemini* (a harvest ritual wherein the farmers harvest a portion of their rice field and later cook the rice to share with the relatives or neighbors who would help them harvest the rest of their produce) is no longer prac-



ticed, the essence of sharing is still alive among most of the farmers interviewed. They still make it a point to share a portion of their harvest with their neighbors, but they have become less wasteful by securing first what they need and would sell, and then giving only the excess. This allows farmers to increase their income.

**Post-harvest.** Though some farmers still prepare feasts after harvesting, such feasts are no longer prioritized. In fact, Jovanie Salif said that instead of preparing feasts for the entire community, he would just have a drinking session with his friends. Unlike his ancestors who give baskets of rice to all their neighbors, Jovanie Salif only gives to those who helped him harvest. Instead of paying money, he gives sacks of rice to the harvesters. He said: “For every 13 sacks of rice, the harvesters get one sack to be divided among them.” Doing so helps minimize expenses.

Nonetheless, there are rice farmers like Alejandro Fitan and Lita Singkan who hold feasts. Feasts are a form of thanksgiving; therefore, if their harvest is good, farmers roast chicken, grill tilapia, and cook the rice that they harvested to share with others. Farmers keep their feasts simple and only invite their immediate family and close neighbors. Hence, co-optation allows farmers to uphold their tradition of sharing even during difficult times.

Corn farmers also share portions of their harvest to their neighbors. For instance, when Tony Gek and the other farmers harvest their upland corn, they share their harvest with their neighbors. Tony Gek said he would invite his neighbors to eat in his house. But similar to other farmers, he would no longer prepare an elaborate feast. This allows Tony Gek to minimize expenses and increase his income.

Meanwhile, though sacks are often used to store rice and corn, those who wish to store seeds for a longer period of time may still use the *sokong*. The *sokong* is the term for the main stem or culm of the *sufu*, a variety of bamboo. Sabang Kala shared: “If you plant immediately, you put the seeds in a sack.”

But if the farmer would not plant right away, he or she could use the *sokong* to store the seeds. “You can keep about two cans of corn seeds in one bamboo,” Sabang Kala added. Combining the indigenous and modern ways of storing seeds may thus provide farmers with the storage system that is most appropriate for their needs.

**Economics and Marketing.** Though farmers now sell their harvest, they still keep a portion of their produce for their own consumption. By merging the indigenous practice of planting for self-sustenance and the modern farming practice of selling their rice and corn, farmers are able to save on food expenses.

Table 1 summarizes the existing cultural farming practices of the T’bolis.

## Conclusions and Recommendations

**Conclusions.** Cultural practices continue to underlie the farming practices of T’boli farmers despite the fact that they have embraced the use of modern seeds and are now very much part of the market system. While at the outset some outsiders may consider these as traditional or even worst, backwards, results show that such practices which are continued or altered actually complement modern practices. This complementation results in the preservation of specific knowledge or skills such as the making of the *sangkol* or *sokbong* that help the T’boli identify with their unique cultural heritage.

However, combining indigenous and modern farming practices requires reflexivity. Farmers relate themselves with their social contexts and vice versa. Hence, they only adopt farming practices that deem fit to their needs, culture, and conditions. Consequently, farmers adopt what is useful, easy to use, practical, sustainable, appropriate, and culturally sensitive.

The ability of the farmers to discern what is appropriate and useful for them shows their potential as partners in knowledge development and sharing. Hence, extension services should acknowledge that

**Table 1 Cultural farming practices of T'bolis**

| PRODUCTION AND MARKETING PHASE | CULTURAL FARMING PRACTICES  |   |   | REMARKS  |
|--------------------------------|---|---|---|--|
|                                | Indigenous Practice   | Rationale   | Modified Indigenous Practice  |  |
| Pre-planting                   | <i>Demsu</i> : Offering and praying to the gods of the forests, soil, and water before they plant           | Asking for bountiful harvest and good health  | Praying in church   | Ritual seldom practiced but incorporated in Christian tradition  |
|                                | Ritual involves praying in the rice field and having a feast to ensure that gods are pleased                |   |   | Offering is made to the Church   |
|                                | Planting schedule is guided by the moon   | Belief that harvest is bountiful when planting is done during full moon                 | Practice has been stopped   | Feasts are simple; food is prepared for the family and farm workers  |
| Land Preparation               | Use of <i>sangkol</i> for cultivation and <i>sokbong</i> for cutting grass when weeding                     | These tools are made by local experts and found very useful and handy                   | Using the <i>sangkol</i> in areas that the plow could not reach                   | T'bolis may be sensitive to the needs of women farmers, so they designed tools that are handy, such as the <i>sokbong</i>                        |
|                                |   |   | Women use the <i>sokbong</i> in lieu of other hand tools that are heavier         |  |
| Planting                       | Intercropping upland rice and <i>pilit</i> corn   | Maximizes land and available resources and increase income                              | Planting hybrid rice in one area and native corn in another                       | Some corn farmers plant native corn for marketing and <i>pilit</i> corn for consumption  |
|                                | Multicropping; crops include staples, vegetables, root crops, taro, sweet potato, banana, coffee, and abaca |   | Practicing contour farming  | Planting different crops complements contour farming   |
| Nutrient Management            | Use of organic materials like leaves, twigs, and animal wastes as fertilizers                               | Increase soil fertility   | Stopped practicing these for a while but have now reverted to organic agriculture | Farmers combine use of organic fertilizer with inorganic fertilizer  |
| Water Management               | Planting trees around the sloping area  | Prevents soil erosion   | Planting trees and constructing canals  | Combining old and new practices made their water management more effective   |
|                                |   |   | Making rice paddies and terraces  |  |
| Pest Management                | Weeding by hand and with the use of the <i>tok</i> , <i>bangkong</i> , <i>sokbong</i> , and <i>kelo</i>     | Controls weeds  | A coping mechanism only when labor is available or when cash is limited           | Farmers combine hand weeding with use of indigenous tools with application of herbicides, pesticides depending on availability of cash and labor |
|                                | Praying and using <i>anting-anting</i> to eliminate field rats  | Controls rats   | Same practice used by elders  | Practice is combined with use of rat control pesticide   |
| Harvesting                     | Using the <i>blis</i> for dehusking when harvesting corn  | Makes harvesting easier   | Same practice used by elders  | Because of practicality, ease of use, and effectiveness, simple hand tools like the <i>blis</i> are still being used                             |
|                                | Practicing <i>kimeni</i>  | Thanksgiving  | Sharing a portion of their harvest but securing first what they need              | Farmers have become more practical, but they still value community spirit  |
|                                | Neighbors helping one another; portion of harvest given to neighbors  | Thanksgiving and promoting camaraderie  | Paying harvesters a portion of the harvest  | Farmers try to lessen their expenses by paying in kind   |
| Post-harvest                   | Preparing feasts  | Promotes communality  | Preparing simple feasts   | Feasts are made simple to maximize harvest and to save.  |
|                                | Using the <i>tebungos</i> or <i>sokong</i> to store rice grain  | The <i>tebungos</i> and <i>sokong</i> were found to be effective storage for rice grain | Use sacks for short term storage and <i>sokong</i> for longer storage             | Combining indigenous and modern ways of storing seeds may provide farmers with a more appropriate storage system                                 |
| Economics and Marketing        | Harvest for consumption and bartering   | Secures needs   | Saving a portion of their harvest for consumption                                 | Saving a portion of their harvest for consumption and selling the rest to middlemen and buyers   |

T'boli farmers are carriers of useful and adaptive knowledge. Consequently, these farmers could be partners in knowledge development and in the delivery of more appropriate extension interventions.

**Recommendations.** There should be specific extension programs or projects for T'boli farmers. These programs or projects must acknowledge the T'boli farmers' available resources and recognize and integrate their traditional beliefs, values, and practices. Extension workers should provide services and technologies that are more responsive to local conditions, more accountable, and more sustainable.

Requisite to improving extension services among indigenous communities such as the T'bolis is an extension framework that recognizes and supports the cultural farming practices of indigenous farmers (Figure 1). Guiding the development and implementation of extension services are the principles of participation, pluralism, empowerment, and cultural sensitivity. These key principles recognize the strengths and opportunities as well as the weaknesses and challenges of the current extension system in Lake Sebu. Adhering to these principles would ensure that the extension system would be able to address the needs of the farmers and make the most of available resources.

At the very heart of the framework are the farmers. This framework recognizes the potential of farmers in taking a more active role in the development and sharing of knowledge to address the difficulty of reaching out to farmers in remote areas. It is believed that the synergy among extension actors may translate to better outputs.

The proposed extension framework thus adheres to the principles of participation and pluralism. The proposed framework recognizes the need for MAO and the farmers to partner with other stakeholders: other government agencies; the private sector such as agro-chemical companies; religious groups; NGOs; and the academe such as SCMSI and the School of Indigenous Knowledge and Traditions (SIKAT). When farmers, agricultural educators, researchers,

and extensionists work together, they could harness knowledge from various sources to improve farming and livelihoods (Rivera, Qamar, and Van Crowder 2001). By collaborating with other stakeholders, MAO would be able to enhance knowledge sharing; maximize available resources and manpower; minimize costs; and reach more marginalized farmers such as the T'bolis.

Furthermore, pluralism in extension services makes it possible to capitalize on the competitive advantages of different actors who may vary in their effectiveness in reaching specific groups of farmers (Heemskerk & Davis, n.d.; GFRAS, 2012). It also enables farmers to choose among alternatives, because these different extension providers offer a wide range of services (Hanyani-Mlambo, 2002).

Meanwhile, the proposed extension strategies are anchored on the opportunities and challenges in the extension delivery system given the uniqueness of the T'boli farmers as revealed in the study. Through the proposed strategies, it is expected that farmers would be able to improve productivity, increase self-reliance, and develop culturally sensitive and environment friendly farming practices.

In the proposed extension framework, the extension strategies are anchored on the principles of an effective extension system and the cultural farming practices of the T'bolis. Hence, these strategies are geared towards building the capacities of the farmers through social mobilization and participatory rural appraisal. Farmers are also empowered to mobilize their own capacities through capacity building, financial participation, networking and collaboration, and organizing farmer groups. Organizing farmer groups maximizes the collectivistic nature of T'bolis.

Also part of the extension strategies is the provision of a participatory learning environment through farmer field schools (FFS). FFS have shown remarkable impact in reducing pesticide use, increasing productivity, improving knowledge, and empowering farmers (Davis, 2008). The development of farmer leaders is also prioritized. These farmer leaders would be trained to address some of the information

needs of fellow farmers in the absence of extension workers or in instances extension workers fail to communicate effectively due to language barriers.

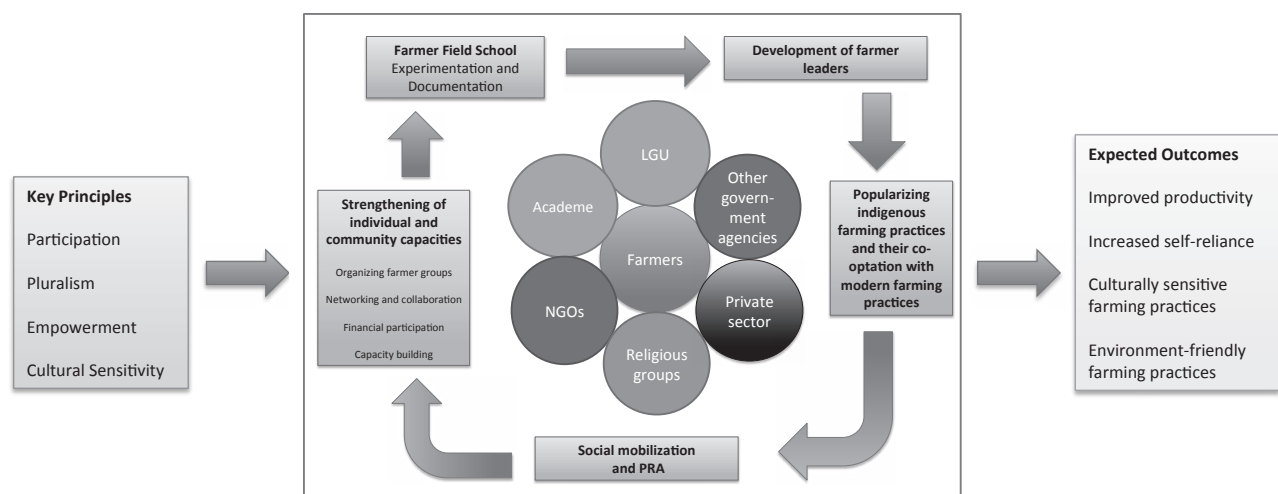
Lastly, MAO could partner with academic institutions in Lake Sebu in popularizing the indigenous farming practices of the T'bolis. As noted in this study, some farmers have already stopped practicing their indigenous farming practices. To ensure that the younger generation of T'bolis would still know about their indigenous farming practices, MAO may collaborate with the School of Indigenous Knowledge and Traditions (SIKAT) and Santa Cruz Mission School, Inc. (SCMSI) in recording and popularizing indigenous farming practices. It is crucial that the youth are educated in their indigenous farming practices as this may help preserve their cultural heritage.

In sum, the proposed extension framework responds to the weaknesses of the current extension system in Lake Sebu as reported in this study: insufficient funds; failure to reach remote areas; inappropriate technologies; inability to speak the local dialect; and the absence of indigenous farmer organizations. It maximizes the strengths of the current extension system and the opportunities identified

such as networks and linkages; the T'boli farmers' willingness to learn and adopt; and the collectivistic nature of the T'bolis.

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**Figure 1 Proposed extension framework for T'boli farmers**



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# Kapangan Indigenous and Sustainable Systems in Harmony with Mother Nature

母なる自然と調和して暮らすカパンガンの原住民たち。世界的な気候変動の厄災をも和らげる彼らの手法はアジアの未来にとっても有益である。

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## Abstract

In the beginning, Mother Nature was in harmony with its co-creation—the animals, the birds, all creatures particularly humankind. Centuries later, the earth changed because of humankind. Today, nature has become the most common concern for humanity. The present situation is saddening and shocking because of climate change complicated with perplexed problems of many countries.

Kapangan, Benguet, just a dot on the map of Asia, is inhabited by more than 20,000 indigenous peoples. Through the ages, Kapangan has taken pride in broadcasting its indigenous sustainable systems being practiced harmoniously with our Mother Nature. The rich natural resources, cultures, customs and traditions make the IPs closely knit, happy and peaceful. The diverse agricultural and environmentally-friendly technologies like natural farming and community-based forest management contribute to their simple but firmly-fixed living. Coupled to these are socio-economic activities and political bearing in their communities led by exceptionally peaceful and calm political leaders.

Kapangan IPs continuously helps in the preservation of nature while building resiliency against climate change and other global concerns. They believe, “*no Filipino goes hungry in his own native land*” and that in some ways, they shall be rewarded.

**Keywords** Indigenous, Sustainable, Harmony, Mother Nature

## I. Nature and Background

In the beginning, Mother Nature was in harmony with its co-creation: animals, birds, and all other creatures, particularly humankind. Many centuries later, the earth ultimately changed because of mankind. Today, nurturing our Mother Nature became the most important concern for the people of the world. The present situation is saddening, if not shocking, considering the effects of climate change complicated with perplexed problems of many coun-

tries in the world like the Philippines.

Subsequently, Kapangan in the Province of Benguet, only like a dot in the map of Asia, is still a fourth-class municipality, inhabited by more than 20,000 indigenous peoples (IPs).

Through the ages, Kapangan has taken pride in broadcasting that indigenous sustainable systems are being practiced harmoniously with our mother nature. Its geophysical and highland characteristics, besides the rich natural resources turned the

municipality as vulnerable and fragile.

With a total land area of 17,327 hectares, the highest elevation is 1,700 meters above sea level from hilly to mountainous and very steep slopes. However, agricultural lands dominate the area consisting of about 42% of the total land area that justifies why farming is the major livelihood in the municipality.

Demographically, the 4,107 households, with an average family size of 5, belong to the Ibaloy and Kankanaey tribes whose ancestors settled the area a long time ago. These tribes have also a world-view and spirituality, which evolved the body of indigenous knowledge, systems and practices and revolved around their relation with their land and other resources. Included in this view is a justice system which had long guided them in using, protecting and managing their resources and all its natural wealth.

As the saying goes, “Whatever we plant today, we will reap tomorrow.” The Kapangan indigenous and sustainable systems as well as practices are still evident these days. These are priceless and should

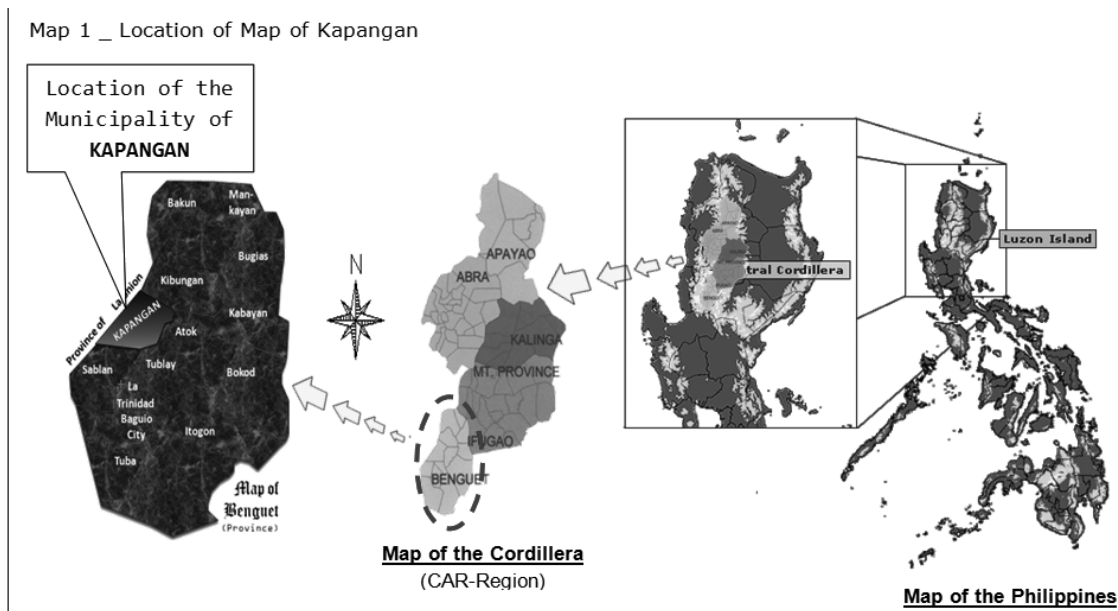
be passed on and transmitted over generations. It is on these premises that such wealth needs to be documented, promoted and ingrained in the minds of the young peoples.

## II. Objectives of The Study

Generally, this descriptive research is aimed at imparting the indigenous and sustainable systems of the indigenous peoples of the highlands of Kapanagan and showing that in some ways they have contributed and will continue to carry out their missions of abating the effects of climate change and other global concerns.

To achieve the goals, the following are the specific objectives:

- To know and be aware of the indigenous systems and practices of the indigenous peoples of Kapanagan geared towards harmony and diversity;
- To be informed, in various ways, that the IPs have contributed to the preservation and conservation of the ecosystems and biodiversity;



**Fig. 1 Maps locating the Municipality of Kapangan, the study area.**

- c) To appreciate the sustainability of the practices and ascertain the effects on the lives of the small farmers and indigenous peoples; and
- d) To document and/or put into writing these indigenous systems and practices, which have been transmitted orally over generations and have propelled the community's development process.

### III. Scope and Coverage

In the attempt to achieve the objectives set forth, the study covered the following aspects:

- A. Forest and Watershed Management Systems and Practices;
- B. Agricultural Systems and Practices; and
- C. Other Indigenous Culture, Customs and Traditions.

And, while this research is descriptive, focus group discussions as well as interviews with the indigenous peoples were the major data gathering tools used to elicit and validate the observations and secondary information.

### IV. Forest and Watershed Management Systems And Practices

Indigenous and sustainable forest management systems and practices are still carried out by the people of Kapangan. Most of them believe that watershed and forests should not go in grave peril. They should be sustained in harmony with Mother Nature. Since the Indigenous Peoples are the original forest keepers, they are also stewards of the forest and the lands. In these ways, they too can claim fair rewards as watershed stewards. At this instance, the IPs are satisfied when their rewards are their being healthy and enjoying their simple but firmly-fixed living. For one thing, they have been practicing all the indigenous community-based forest management systems thru the ages and have been thinking of the next generations.

This section relates to the systems of the IPs,

comprising more or less 4,000 households in the study area, in relation to forest and watershed management. Among these are described as follows:

#### ***A. Conservation of the Kalasan or Kadasan***

The IPs practice stewardship over a forest where they help guard and protect such forest area called Kalasan by the Kankanaeys and Kadasan by the Ibalays. These were orally delineated by the old folks for the community. Behind this, the people observe a kind of spirituality which deeply reveres all forms of life and life-giving support systems such as land and rivers. One has to say a prayer and observe some omen, good or bad, before cutting a tree to be used to build a house. This illustrates the indigenous folks' high regard for their resources and how they deeply revere all life forms.



**Fig. 2 A picture showing the preserved Kalasan or Kadasan**

#### ***B. The Protection of the Kaewan or Kijowan***

Every family in the community maintains a Kaewan or Kijowan aside from the communal forest as above described. The products from these areas have particular uses but usually wood from the Kaewan or Kijowan are used for fuel for cooking or during rituals and social gatherings, some for medicines and some as sources for food. Hence, gathering of forest products thus depends on the particular need of the family or community.

Oftentimes, indiscriminate cutting of trees is considered a sin and when the spirits are displeased, they





**Fig. 3 The family house is within the Kaewan or Kijowan**

may punish the culprit with illness and even death. These beliefs evolved into a cultural principle called *inayan*. This *inayan* is much like the law of karma or law of cause and effect or action and reaction. In another Christian version, this is the principle of “as you sow, so you shall reap.” This law therefore controls the cutting of trees but encourages protection of the forest and woodlands. Hence, when one protects nature, he has pleased the spirits and most of all the “*Kabunian*,” as the creator of the earth and all life and non-life forms. Therefore, he gets blessed for protecting and using wisely the resources he has been entrusted with. (Fig. 3)

### ***C. The Establishment and Promotion of Eco-Tourism Parks***

Nature’s beauty abides in most of the barangays of Kapangan, and eco-tourism parks have been established in some areas. From the beautiful rocky-mountains up to their age-old rice terraces have evolved their own time-tested technologies and resource management schemes (Fig. 4). Chiefly, these are indigenous but sustainable and the people regard these lands and all its wealth as an inheritance which must be bequeathed to generations yet unborn.



**Fig. 4 One of the Eco-tourism Parks in Kapangan that entices local and foreign tourists.**



**Fig. 5 The Management of the Ecosystem: Flora and Fauna Protected.**

### ***D. Biodiversity or Ecosystem Management***

Aside from believing and worshipping *Kabunian* as the Supreme Being, the indigenous peoples also believe that spirits and deities are guarding and managing the land, the forests, rivers, caves, and endangered animal species. From such a belief system, values and ethics or the sense of right or wrong evolved. And, all people’s action perceived that are not permitted by the guardians can bring misfortunes, strong typhoons, earthquakes and disasters. Hence, the biodiversity or the flora and fauna should be managed properly to have a balanced ecosystem. (Fig. 5)

## V. Sustainable Agricultural Systems And Practices

As background, agriculture is a cause and effect of climate change. Actually, agricultural land contributes 12% to greenhouse gas emissions that affects our mother nature. Hence, agriculture must adapt to climate change in order to provide food security and maximum agricultural development that everybody aimed for.

More than 1,000 small farmers of Kapangan in many ways have adapted the diverse and sustainable agriculture technologies as described in this section. This includes the following:

### A. Old-Age and Hand-Made Rice Terraces

Like the other indigenous peoples in Northern Philippines, the e-Kapangans (inhabitants of Kapangan) must also be credited with developing the rice-terrace farming technology. This technology is also an engineering technique of impounding earth along a foothill or river valley. The technique called *kabite* involves lining up of stones fitted together on top of the other without support of clay or mortar (Fig. 6). These riprap walls form terraces that produce levelled plots to retain fertile soil. It is also in this way that they could make riprap walls in between slopes or gullies to prevent erosion and collect instead the top soil for crop production.



Fig. 6 Man-made Rice Terraces in Kapangan, Benguet.

The Kapangan rice terraces are said to be centuries old, have fed and nurtured generations and will continue to do so as long as water continues to flow from the mountains. In relation to this, the Indigenous Peoples will continue to help in the preservation of nature through building these resilient rice terraces because of their genuine belief that “no Filipino goes hungry in his own native land.” All these portray their religiosity toward their Creator, creativeness, patience and industriousness, and the belief that they shall also be rewarded.

### B. Multiple Cropping

At least 575 farmers in Kapangan have practiced multiple cropping since long ago. They know how to consider the compatibility of crops. “Plants have likes and dislikes, friends and enemies.” (Fig. 7)

### C. The Practice of Intercropping

The main crop is planted with cash crops in between. These diverse and green technology increases the agricultural productivity of the farmers side by side by giving more economic returns on the same parcel of land. “Plants have likes and dislikes or friends and enemies.”

Fig. 8 shows that dragon fruit is the main crop, intercropped with ube (left photo) while ampalaya is the main crop with the snap beans being intercropped (right photo).



Fig. 7 A type of multiple cropping where the main crop





**Fig. 8** A picture of a farm depicting how intercropping is practiced in the area.

#### ***D. Multi-storey and Cover Cropping Practices***

Even without the climate change phenomena, the IPs had long time ago practiced this multi-storey and cover cropping. This is common in the sloping areas or mossy forest where coffee and other shade-loving crops are planted under alnus trees and other larger tree species. While there is diversity in agriculture (coffee plants, cut flowers, gabi and other plants under the shade trees), the old people can now say that the fresh and clean air they breathed are the impacts of the century-old farming system that they adapted. (Fig. 9)

#### ***E. Succession Cropping/Crop Rotation***

This cropping pattern is obviously done by the farmers in this highland region, not only in Kapangan. Crop rotation is at the same time a technology that prevents soil borne diseases and other forms of infection. In the study area, particularly in the rice terraces, the farmers have native rice as their first crop and after 6 months, bell pepper, sweet potato and/or peanuts will be planted after harvesting the palay. (Fig. 10)

#### ***F. The Indigenous Ways of Pest Management***

Pest management in the community is not using pesticides or insecticides on their farms. Decades have passed and farmers have known these green technologies using fermented plant juice (FPJ) and



**Fig. 9** Coffee, ginger and even anthurium are planted under alnus trees.



**Fig. 10** Rice-peanut-rice or rice-camote-Bellpepper cropping pattern

fermented fruit juices (FFJ) to spray or water their plants in the farms to control insects and diseases. Likewise, some animals, fowls, and frogs prey on insects and these living animals control pests attacking their plants. The following pictures show plant and fruits that can be extracted or juiced, in order to control pest and diseases.

Other farmers had already known that some plants are insect repellent like lemon grass, rosemary, marigold, and these are planted in hedgerows and along sides of the farms. Handpicking and manual destruction of insects is also carried out by some farmers. (Fig. 11)

#### ***G. Mulching of Crops even up to Post-Harvest***

The system of mulching of crops has been practiced



**Fig. 11** This picture shows the crops and animals that are used for pest management



**Fig. 12** This picture shows how mulching is done by IPs in Kapangan, Benguet.

by the IPs in the highlands since time immemorial. When the farmers do weeding on their farms, these are simply collected to cover the plants up to when they are dried as organic matter that will fertilize and/or moisturize the soil.

Even up to post harvest like in ginger crop, mulching is done to preserve the harvested products and will only be marketed when price is favourable. (Fig. 12)

### ***H. Composting/Mokusaku Technology***

The farmers in Kapangan know that soil enrichment is basic in farming. They believe that healthy soil rich in organic materials raises healthy crops. Soil enrichment is possible through application of compost to the soil. Hence, farmers practiced composting



**Fig. 13** This picture is the Mokusaku Composting Facility and Technology adapted by Kapangan Farmer organizations

on their agricultural venture even before new technologies came.

Modern technologies of composting are already being adapted in Kapangan. Mokusaku is one major innovation in composting which was introduced by Mr. Masaki Yokomori of Japan. Before this technology, however, older farmers did composting by accumulating animal manure mixed up with vegetable debris and other weeds up to these are decomposed. However, when the mokusaku technology was operational, the farmers extensively used mokusaku or wood vinegar as media for the composting process. Fig. 13 illustrates the new composting technology with facilities operated by farmer organizations.

### ***I. Container Gardening***

This practice is done in the backyards of the households, in 27 schools (elementary and High Schools) and other government and non-government institutions in the Municipality.

This system of gardening at least solved the problems on food security where food is plenty on the table, even when cash is insufficient. In the schools, there is a government program through the Department of Education (DepEd) called "*Gulayan sa*





**Fig. 14** The above photo illustrates the container gardening practice of institutions in the area.

**Paaralan.**” Students and pupils and teachers are enjoined to maintain a backyard farm using container gardening technology and other indigenous technologies. (Fig. 14)

## VI. Other Indigenous Cultural Practices, Customs and Traditions

### A. Anitap Festival

This local **Anitap Festival** is named after the abundant and free-growing tree in the area called **Anitap**. As a social gathering, the young and old celebrate and enjoy coming together as one family with the approval of **Kabunian**. With their **gongs** and **solibao** (drums), they dance and sway their **tayao** for men and **sarong** for women.

In this festival, they butcher pigs and offer these to **Kabunian** and the **spirits** as thanksgiving for blessings and provisions bestowed on their families and their communities in all the days.

### B. Christmas Ed Kapangan (Christmas in Kapangan)

Every Christmas time, the Local Government Unit of Kapangan organizes this three to four days **Christmas ed Kapangan** where local and foreign tourists

register for this activity for a fee. This includes trekking over the identified eco-tourism destinations and experiencing or observing the customs and traditions of the indigenous peoples in Kapangan. In this occasion, the IPs will gather and celebrate with the tourists. While the tourists enjoy it, the IPs also are happy entertaining them and exercising their hospitality attitudes as a sign of thanksgiving.

### C. The Tongtong System (Peace, Justice and Harmony)

The harmonious and peaceful life of the IPs in Kapangan is not an accident. A well-organized socio-political and justice system had guided the Ibalays and Kankanaeys for generations especially on land disputes, family problems and community issues.

The **Tongtong system** covers all aspects of behaviour and its decision-making process is participatory. Under this indigenous system, no one is judged and no one formally presides. Believed to be as old as the first settlers of the community, this justice system, based on consensus, can be credited for the very low crime rate in this upland town. This have been passed on to one generation to the next from the venerated ancestors; thus accepted as sacred and unchanging. Nobody knows who legislated this law nor does anybody knows whether the **Tongtong System** has ever been amended. What is clear is that the system exists in the memory of wise, old men and women, who are considered the best arbiters in the village.

**Bain** or shame is the ultimate sanction for a crime and it makes living for a convicted person intolerable in a unanimously reproachful community. Oftentimes, this win-win system of conflict resolution requires some rituals to be undertaken by both parties, all expenses charged to the convicted person.

All these rich cultures, customs and traditions result to a peaceful, happy and closely-knit lifestyle of the indigenous peoples of the community.

## VII. Interdisciplinary Partnership and Networks

The lead in pursuing these time-tested indigenous knowledge systems and practices is the Municipal Local Government Unit (MLGU) of Kapangan headed by Municipal Mayor Roberto K. Canuto, the co-author of this paper. These are community-driven that is compared to a house built on a solid rock foundation. The government and non-government roles and interventions are just facilitative.

To realize the public-private partnership aim of the country, a network of outsiders was organized into a programme entitled *“Weaving Partnership of Stakeholders towards Economic Development and Good Governance in Kapangan.”* In sustaining the agriculture systems, members of this network include the Department of Agrarian Reform (DAR), Department of Agriculture (DA), Department of Public Works and Highways (DPWH), and others. On institutional development and good governance, the facilitating agencies are the Department of Interior and Local Government (DILG), Department of Trade and Industry (DTI), Department of Labor and Employment (DOLE), Benguet State University (BSU) representing the academe, etc. The private partners or the Non-Government Organizations serving the Municipality, and as members of the Network, comprise the Shontoug Foundation as the Convenor of the Network or Partnership of Stakeholders, and the Benguet Electric Cooperative (BENECO).

From all indications, this partnership can succeed further in facilitating these community-driven participatory endeavours in sustaining the indigenous knowledge systems and practices.

## VIII. Conclusions, Challenges and Plan Of Actions

The Kapangan Indigenous and Sustainable Systems (KISS) herein documented and uncovered in this study are geared towards harmony and diversity. The ecosystems and biodiversity have been preserved and conserved for the present generations for these were transmitted orally (knowledge and systems) and physically (rice terraces, land, etc.) to more than a thousand families in the locality and have propelled the development of the e-Kapangans.

From the agricultural development point of view, the farmers are still considered small farmers on the account of economic standing. Contrastingly, the eco-tourism industry has somewhat upgraded and is still reaching its desired goal. Ultimately, the Kapangan’s sustained indigenous systems in harmony with Mother Nature is a gift to the next generations, especially those who care much about the kind of development where the indigenous people matters most.

Therefore, plans of action through the bottom-up participatory approach will be in collaboration with the civil society organizations. Sustaining these indigenous and sustainable technologies shall be pushed and implemented consequently with the development plans of the government.

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# Investigation and Analysis of Electricity Tariffs in Japan, China and Thailand

日本、中国、タイの電気料金を比較・検討する。これにより合理的な料金設定を考えることができ、再生エネルギーの導入にもつながっていく。

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## Abstract

The issue of global warming due to rising greenhouse gas (GHG) emissions presents a great challenge to the stability of the world's climate, economy and population. A major source of GHGs is the burning of fossil fuels to provide energy, particularly electricity. Furthermore, in some developing countries with rapid economic development, due to the severe electricity shortage, ration power supplies have been introduced in the peak seasons. With this background, since the 1990s, electricity market regulation, especially tariff regulation, has been paid more and more attention around the world. A rational electricity tariff may promote the introduction of renewable energy and energy efficiency measures. In this study, the current status of electricity tariff in three main Asian countries, namely, Japan, China and Thailand, is investigated and compared. Firstly, by examining the electricity tariff structures in various countries, their difference and characteristics are recognized. Then, the tariff rates in different countries are illustrated and compared from the residential, commercial and industrial aspects. According to the results of analysis, both tariff structures and rates show obvious diversity in the three examined countries. It will be beneficial for a country to develop a rational electricity tariff by executing such an international comparison.

**Keywords** Electricity tariff structure; Tariff rate; Japan; China; Thailand

## 1. Introduction

It has been widely recognized that global climate change due to rising greenhouse gas (GHG) emissions presents one of the greatest challenges for human development. A major source of GHGs is the burning of fossil fuels to provide energy, particularly electricity, which is the key end-use energy type. It is reported that the share of electricity in global energy consumption increased from 12% in 1980 to 19% in 2007. Furthermore, about 68% of the world's

electricity was generated by fossil fuel combustion (IEA, 2009a; IEA, 2009b). Therefore, it is expected that the electricity sector may play an important role in future climate change strategy through cleaner power generation and reduced electricity consumption. On the other hand, in the past few years, global electricity consumption has been growing gradually to a value as high as 19,800 billion kWh by the year 2007. Within this, the developed countries (e.g., China, etc.) with rapid economic develop-



ment contribute the most to the increased electricity consumption. However, severe electricity shortage still prevails in these areas especially in some peak seasons. For example, in China, power shortage reached 40 million kilowatts at the beginning of 2008. Power rationing had to be implemented for industry to ensure residential application. Against this background, in order to deal with continuing global warming and increasing power consumption, since the 1990s, electricity market regulation has been paid more and more attention around the world. Within this, tariff regulation is considered the key item because a rational electricity tariff may promote the introduction of clean energy and energy efficiency measures. A lot of research has been reported on this topic. Al-Sanea et al. (2005) investigated the effect of electricity tariff on the optimum insulation thickness in building walls. Luk (2005) reviewed the problems and inefficiencies of the electricity tariff in Hong Kong and promoted some suggestions for overcoming them. However, when examining the electricity tariff in a specific country, a global viewpoint is always necessary to compare it with the situation in other countries. By learning the good aspects which have been introduced in other countries and taking into consideration their own characteristics, a reasonable tariff can be developed.

In this study, focus is placed on three main Asian countries, namely, Japan, China and Thailand. First, the current status of electric power supply and consumption is reviewed. Second, by examining the electricity tariff structures in various countries, their difference and characteristics are recognized. In addition, the tariff rates in different countries are illustrated and compared in terms of residential, commercial and industrial aspects.

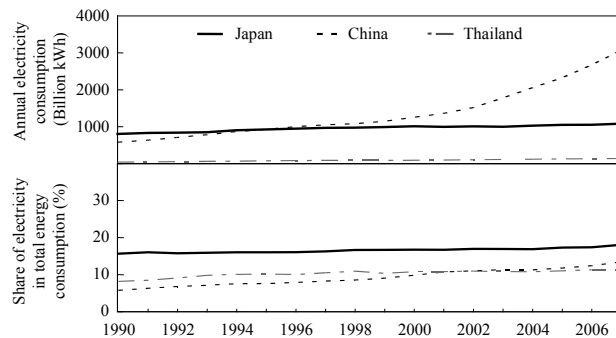
## 2. Current Status of Electric Power Supply and Consumption

Before investigating the electricity tariff, it is of vital importance to understand the current situation of power supply and consumption, which may reflect

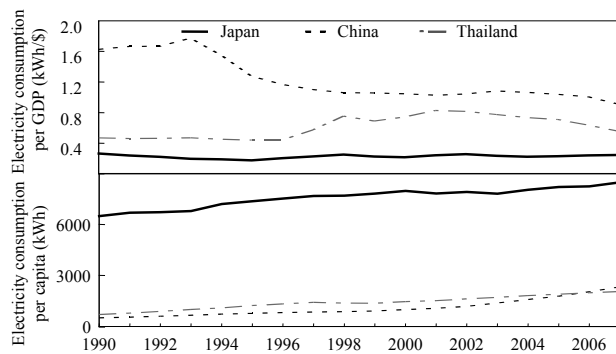
the nature of current electricity tariff and affect future tariff regulation. China has the largest power capacity (796 GW), following by Japan and Thailand, with the values of 241 GW and 30 GW, respectively. In addition, in Japan, the main energy source for power generation is LNG, which has a share of about 25.5%, followed by nuclear, hydro, oil and coal. However, in China, the situation is quite different. Coal plays the dominant role in power generation, with a share of about 71.6%. Hydro is another main source for power generation in China with a ratio of about 21.6%. Furthermore, it is interesting to note that due to recent rapid development of wind farms, the capacity of wind turbines has increased over that of nuclear stations. In Thailand, natural gas is the dominant energy source with a share of about 71.2%, followed by coal, hydro and oil.

Fig.1 illustrates annual electricity consumption and electrification rates in the three countries. As expected, Thailand has the lowest electricity consumption due to its small area and population. Power consumption in China has increased gradually, especially in recent years. By the year 2007, annual total power consumption increased to about 3073 billion kWh, which is about five times of that in 1990. On the other hand, the increase of power consumption in Japan is marginal. Furthermore, before 1995, Chinese electricity consumption was less than Japan; after 1995, it showed a rapid increase to a value as high as three times that in Japan by the year 2007. As to the electrification rate, Japan has a relatively large ratio at around 15-18%. Due to the rapid development of Chinese electricity industry, the electrification rate increased from 5.8% in 1990 to about 13.5% in 2007.

In addition, in order to understand the general efficiency of power consumption, Fig. 2 shows per GDP and per capita electricity consumptions in the three examined countries. According to the profiles illustrated in the figure, Japan has the lowest per GDP power consumption, which was about 27% of China. This is partly due to its high energy-utilization efficiency. In the past few years, Chinese



**Fig. 1 Comparison of Electricity Consumption and Electrification Rate**

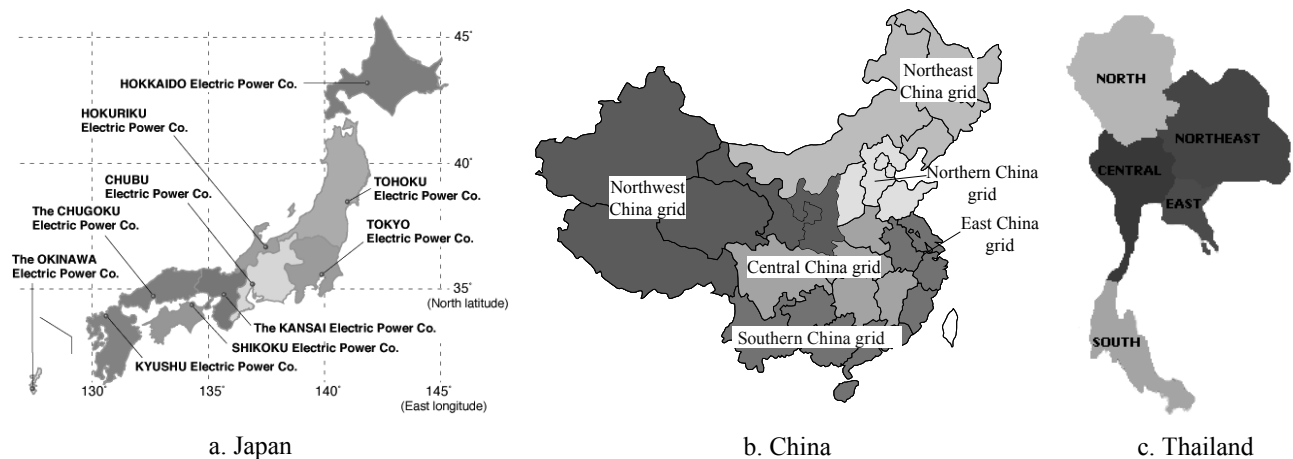


**Fig. 2 Comparison of Electricity Consumption Intensity (Per GDP and Capita)**

electricity consumption intensity has been decreasing gradually, although was still at a relatively high value, which was even larger than that of Thailand. However, it is interesting to notice that electricity consumption intensity illustrated a rising trend in the past few years compared with that in the 1990s in Thailand. On the other hand, in terms of per capita electricity consumption, Japan has the largest value and is increasing gradually. This is due to its relatively high level of quality of life. China had relatively low per capita electricity consumption but was rising gradually.

### 3. Review of Current Electricity Tariff Structure

Fig. 3 shows images of electricity supply grids in Japan, China and Thailand. It can be concluded that, in Japan, the electric utility service is provided by ten regional power companies. As to China, the situation is more complex. Generally, national electricity consumption is served by two companies, namely, the Southern China Grid and State Grid, which is further divided into five sub-grids. In addition, each sub-grid is composed of several province level companies. However, the situation is quite



**Fig. 3 Image of electricity supply grid in Japan, China and Thailand**

simple in Thailand due to its relatively small area. A single electric utility takes the role of the whole power supply for the country.

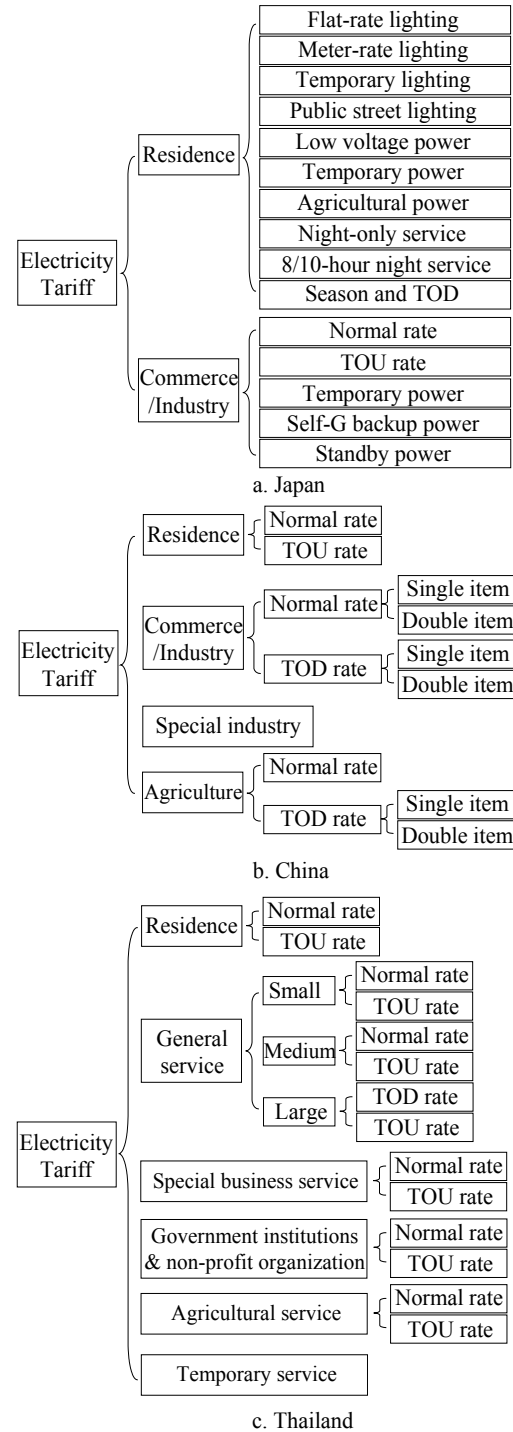
Although there may be some differences among the tariffs of various companies in a single country, the fluctuation is marginal. Fig. 4 shows the general electricity tariff structure in the three countries. Generally, residence, commerce and industry are treated in separate ways. In addition, a normal rate and a time of use (TOU) (or time of day: TOD) rate are the main tariff types in all three countries. However, according to the figure, some difference in the tariff structures can be concluded as follows.

① Many more alternatives are available for residential power application in Japan than in the other two countries. In China, special industry with relatively high energy consumption is endowed a specific tariff which is not assessed in Japan and Thailand. In addition, a special tariff in Thailand is set for government institutions and non-profit organizations, which are given no attention by China and Japan.

② In China, the TOD tariff is employed for all applications. However, it is only applied to residential use in Japan and large service in Thailand. On the other hand, the TOU tariff is widely employed in Japan's commercial and industrial application and all sectors in Thailand.

③ Although double-item tariffs (composed of demand charge and energy charge) are wide spread in both Japan and Thailand, they are still an alternative one in China.

As to the components of electricity tariff, as shown in Fig. 5, China has the simplest one which is only composed of an energy charge and a demand charge (sometimes is neglected). In Thailand, a service charge is added to some applications. Japan has the most complicated tariff components. Besides the normal energy charge, the fuel cost adjustment amount is included. In addition, in order to promote the adoption of photovoltaic system, a solar surcharge which is proportional to the power consumption is expected to be introduced next year.



**Fig. 4 General Electricity Tariff Structure in Japan, China and Thailand**

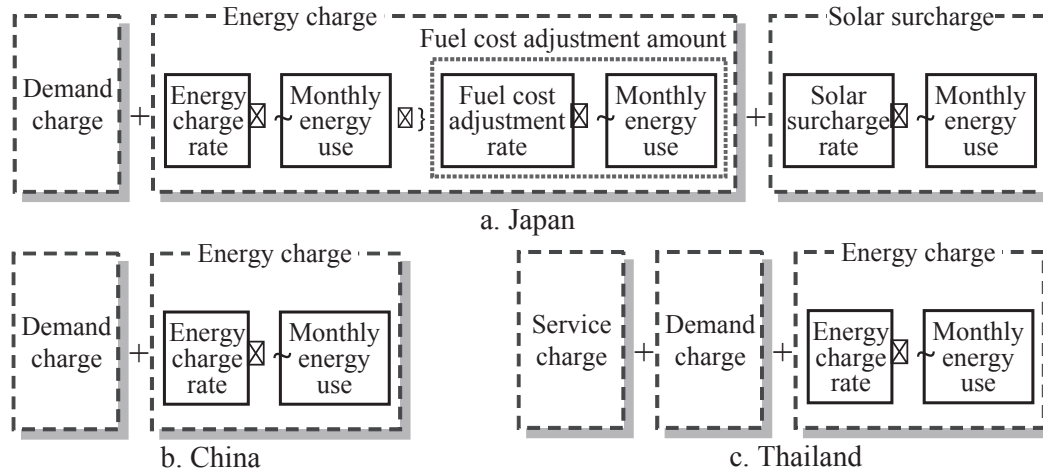


Fig. 5 Electricity tariff components

## 4. Comparative Analysis of Electricity Tariff Rates

It is difficult to compare electricity tariff rates due to the following reasons. On the one hand, different tariff structures may be introduced in various countries as discussed above. On the other hand, currency exchange rates are always fluctuating. In the following, the average unit rates with different calculation methods are compared for the three examined countries.

### 4.1. Comparison Based on Statistical Data

The average unit rates published in the statistical data are usually calculated by dividing total income from electricity sales by the quantity of electricity sold. It is the easiest and most common method to calculate average unit rate for a company or even a country. Fig. 6 shows the average tariff rates in Japan, China and Thailand in 2007. According to the figures, different from other two countries, the residential tariff rate is lower than the commercial and industrial rates in China. In addition, Japan has a relatively high tariff rate compared with both China and Thailand.

### 4.2. Comparison Based on a Model Case

In this method, the actual electricity bills paid by users are used to compare the tariff rates. An

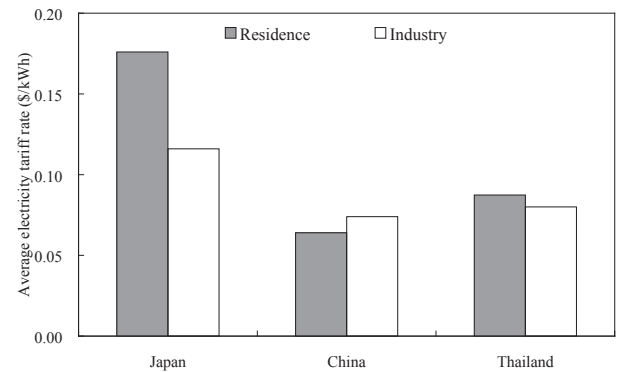
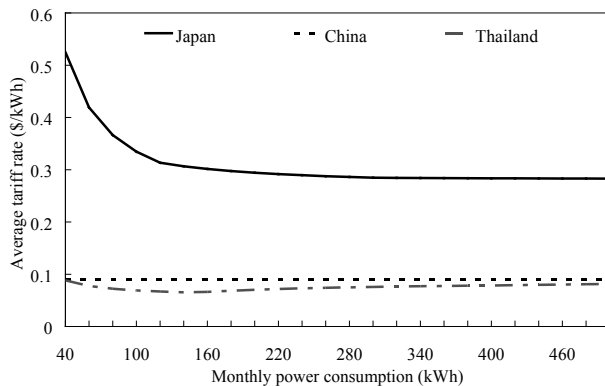


Fig. 6 Comparison of Average Tariff Rates in Japan, China and Thailand

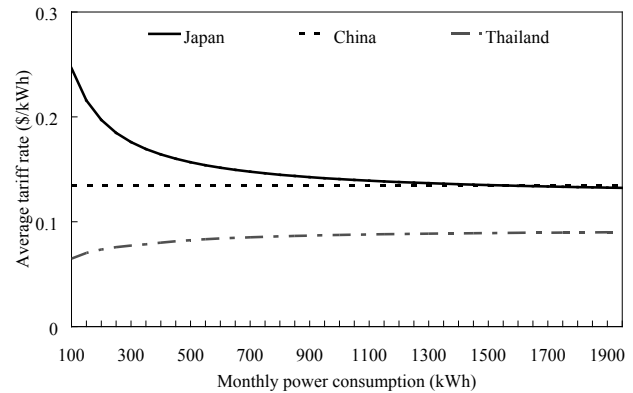
assumed user with unified usage conditions (menu, contract demand, power consumption, etc.) is predetermined, and the average tariff rates are calculated and compared. In the following, actual tariff rates of representative utility companies in Japan, China and Thailand are investigated and applied to the model case. For simplicity, the normal rate is assumed for the power consumption in the summer period.

Fig. 7 shows the average tariff rate for residential application with monthly power consumption between 40-500 kWh. Generally, Japan has a relatively large tariff rate, which is about 3 times greater than that of China and Thailand. In addition, due to the





**Fig. 7 Comparison of Average Tariff Rates with Varied Power Consumption (Residential Customer)**



**Fig. 8 Comparison of Average Tariff Rates with Varied Power Consumption (Commercial Customer)**

introduction of demand charge, the average tariff rate decreases as the power consumption increases. China has a flat tariff rate which is larger than that of Thailand.

On the other hand, looking into the average tariff rates for commercial application as shown in Fig. 8, Japan has a reduced commercial tariff rate than the residential one, which is quite different from the situation in China. In addition, when monthly power consumption is over 1600 kWh, the average tariff rate in Japan even decreases below than that of China. In Thailand, the commercial tariff rate shows an increased trend with the rise of power consumption.

## 5. Conclusions

In this study, firstly, the current status of electric power supply and consumption in Japan, China and Thailand are reviewed. By examining the electricity tariff structures in various countries, their difference and characteristics are recognized. In addition, the tariff rates in different countries are illustrated and compared from the residential, commercial and industrial aspects.

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# The Effects of Dynamic Pricing and Photovoltaic Technology on Cost Performance in a Residential House

電力料金を需要に応じて変動させるダイナミック・プライス。これを一般住宅で採用したとき、その損益はどうか。また太陽光発電を利用すれば。

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## Abstract

This paper investigates the effect of dynamic pricing system on residential house use and also analyzes the influence of introducing photovoltaic technology into the dynamic pricing system. Through the calculations, it can be realized that each month of total spending on electricity, dynamic price is higher than using regular prices under the condition that the initial electricity load of residents remains unchanged. The conclusion is that introducing photovoltaic technology into the residential side can eliminate extra fees caused by using dynamic pricing. Compared to consumers using dynamic pricing without equipping with photovoltaic technology, the cost reduction ratio can reached at 35.45%. Additionally, the effect of buy-back price on choosing the capacity of photovoltaic has also been analyzed.

**Keywords** Dynamic price; Photovoltaic; Economic performance; Electric systemv

## 1. Introduction

Dynamic pricing is a pricing system that can give consumers powerful incentives to consume less when the system is highly stressed and wholesale prices are very high. As shown in Fig.1, it is a demand response method which requires the participation of both consumers and the power supply enterprises. It is more economical than the time-invariant pricing. Most dynamic electricity pricing currently in use were illustrated as follows. One is to offer residential consumers time-differentiated tariffs that better reflect real-time price variations than traditional flat rates predominant in many markets. Time-differentiated tariffs charge electricity consumers' high prices in peak-load periods and low prices in off-peak periods. Examples of tariffs are the time-of-use (TOU)

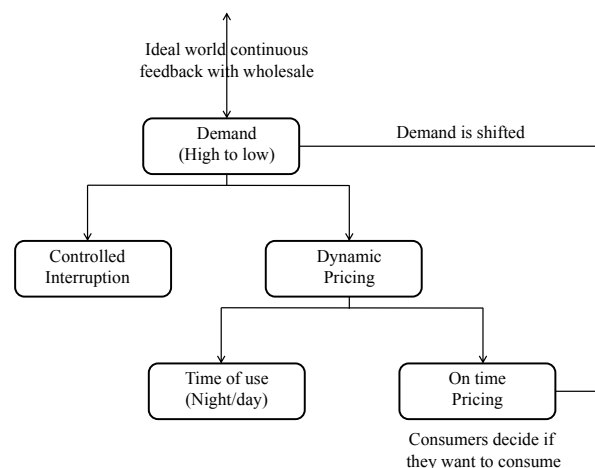


Fig. 1 The way that dynamic pricing shift demand

rate, where prices vary by hours-of-the-day blocks. Another is the more dynamic critical peak pricing (CPP) rate, where higher prices may be imposed if the system is severely constrained as in cold winter periods or warm summer periods. Real-time-price (RTP) is updated every day on an hourly or sub-hourly basis, to closely mirror spot prices in the wholesale market. In these all instances, end-users have incentives to respond to short-term price variations by reducing peak consumption or by shifting peak consumption to off-peak periods.

The target electricity price system in this paper is critical peak pricing. In previous studies, researchers mainly concentrated on the problem of how consumers can effectively respond to the peak electricity price. For this purpose, different methods are used to guide consumers to reduce their electricity consumption in peak period reasonably. The hotspot of their research is to extremely improve the degree of residents' demand-response, ignoring the normal living standards of residents. In contrast, in this paper, we take the perspective of the ordinary residents, assume that the electricity load of residents in peak period remains unchanged for ensuring their original living standard, investigating the effect of dynamic pricing system on the residential house use and also analyzing the influence of introducing the photovoltaic technology into the dynamic pricing system.

## 2. Case setting

### 2.1 Data base

#### 2.1.1 Climate data

The strength of solar radiation is the primary consideration in selecting location for PV installation. Local climate and environment factors such as temperature, humidity, precipitation, and wind will constrain the output of PV array. Nevertheless, these are all secondly effects when compared with insolation intensity.

As the third largest island of Japan, Kyushu has advantageous conditions of climate and geothermal character. The annual cumulated hourly irradiation

and hourly maximal irradiation are shown as Fig. 2. According to this profile, it can be seen that maximum irradiation is at 12:00 in the midday.

#### 2.1.2 Electricity load data

In this study, a two-story detached house with floor area of 183m<sup>2</sup> has been selected as a case study. Fig. 2 shows the load changes within one day of residential users in three representative months.

In January, as Fig. 3 shows, the electricity load of residential consumers decreased slowly from 1:00 to 4:00. It began to rise slowly from 5:00 to 7:00, owing to the residents' daily activities in the morning. About 8:00, the load reached at morning peak period, after

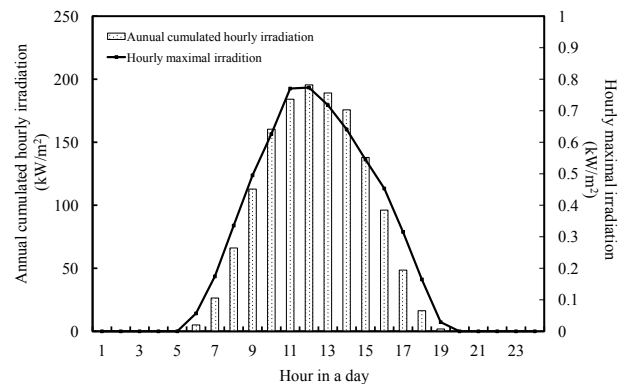


Fig. 2 Annual cumulated hourly irradiation and hourly maximal irradiation

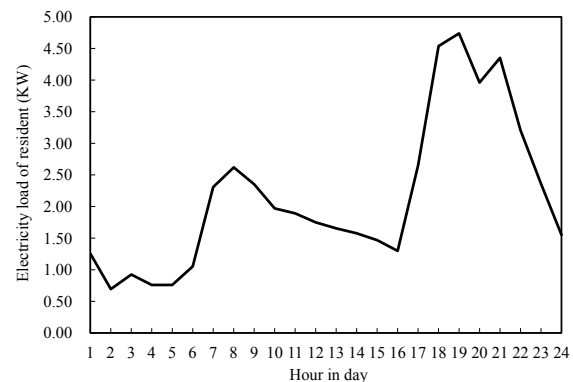


Fig. 3 Electricity load of residential consumers in January

which the load fell slightly. In the period from 16:00 to 19:00, the load curve continued its rise, reaching an evening peak at 19:00 and continued until 21:00. Then it began to fall, reaching a low point at 5:00. In January, the maximum load was 4.74kW, the minimum load was 0.69kW, and the peak-vale difference was 4.05kW.

In August, as Fig. 4 shows, from 8:00 in the morning, some household appliances resulted in the load reaching 1.23kW. After that, due to the high temperature in summer, cooling load began to increase making the load rise to a higher level. From 18:00, most people left work, so household appliances' opening rate increased and the load continued to climb. At

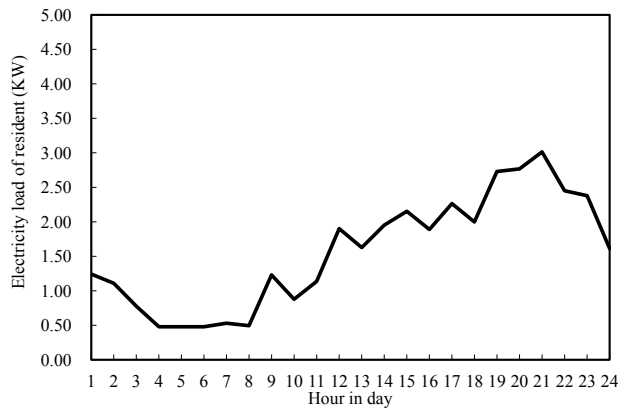


Fig. 4 Electricity load of residential consumers in August

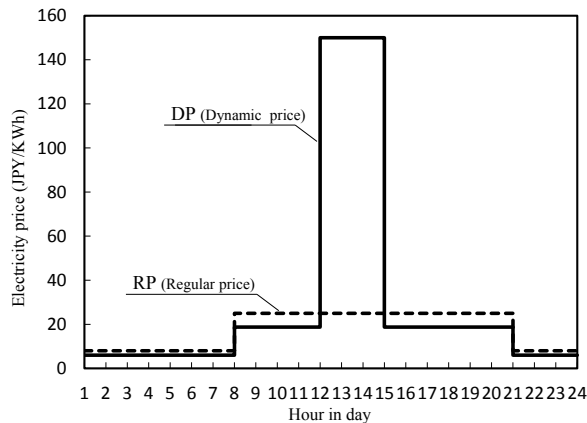


Fig. 5 Electricity price in a day

20:00, night lighting gradually commenced, and the electricity load reached a maximum at 21:00.

### 2.1.3 Electricity price data

Here, we choose time-of-use electricity price as the research target. There are two primary ways of pricing, one is the regular price (RP), and the other is the dynamic price (DP), both of them are shown as Fig 5. For RP, the price is 8JPY/kWh for 1:00 to 7:00 and 22:00 to 24:00, and 25JPY/kWh for 8:00 to 21:00. For DP the price is 6JPY/kWh for 1:00 to 7:00 and 22:00 to 24:00, 18.75JPY/kWh for 8:00 to 12:00 and 16:00 to 21:00, and 150JPY/kWh for 12:00 to 15:00. Compared with the regular price, the dynamic price in the periods 1:00-7:00, 22:00-24:00, 8:00-12:00 and 16:00-21:00 declined in the proportion of 25%. The peak period price from 12:00 to 15:00 of DP is about 6 times higher than the RP.

### 2.1.4 Photovoltaic data

Photovoltaic is a method of generating electrical power by converting solar radiation into direct current electricity. PV properties are shown as Table 1. In this paper, we chose ND-165AA model of photovoltaic panels produced by Sharp. The output of that panel is 165 W and efficiency is 14.3%. According to electricity load, the whole area of photovoltaic panel is 34.965 m<sup>2</sup> and capacity is 5 kW. The initial cost of that panel is 460000 JPY/kW and lifetime is 20 years.

Table 1 Photovoltaic information

| Content              | PV     |
|----------------------|--------|
| Output(W)            | 165    |
| Efficiency           | 14.30% |
| Whole area(m2)       | 34.965 |
| Capacity(kW)         | 5      |
| Initial cost(JPY/kW) | 460000 |
| Life time(year)      | 20     |



**Table 2 Three different cases**

|        | Electricity price mode | Photovoltaic |
|--------|------------------------|--------------|
| Case 1 | Regular price          | not have     |
| Case 2 | Dynamic price          | not have     |
| Case 3 | Dynamic price          | have         |

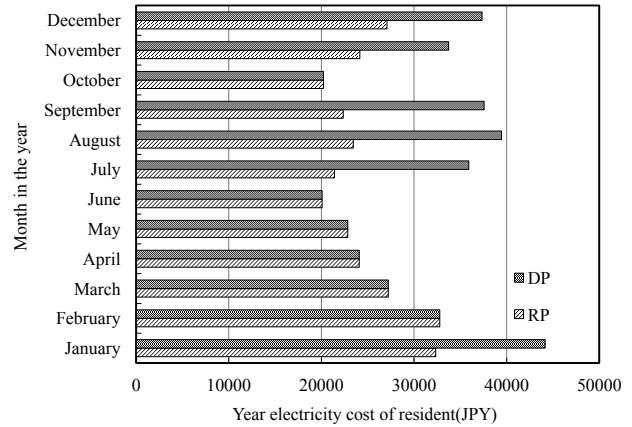
## 2.2 Case setting

Three different ways were planned for the cases. The related information was shown in Table 2. We let case 1 only use the regular price as shown in Fig. 3. Case 2 used the dynamic price as shown on Fig. 3. Both case 1 and case 2 are not equipped with photovoltaic. Through the comparison between case 1 and case 2, we can draw a conclusion about whether the residents can benefit from using dynamic price. In case 3 using the dynamic price, meanwhile, photovoltaic was introduced. Through the comparison between case 2 and case 3, we can determine whether introducing photovoltaic into the residential side can eliminate extra fees caused by using dynamic price.

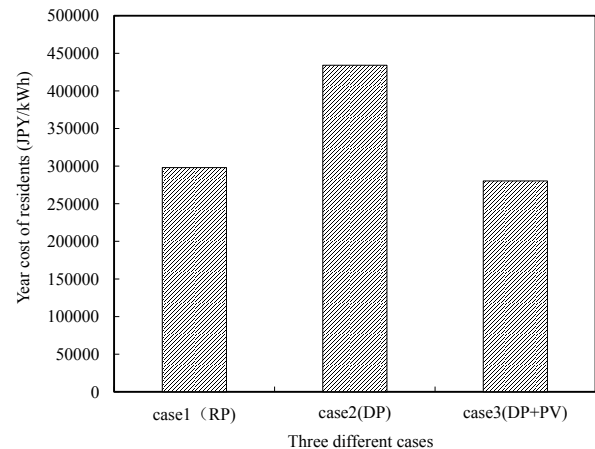
## 3. Case Analysis

### 3.1 The effect of dynamic pricing on the cost performance in a residential house

In a general way, there is a difference in the peak load period between residential consumers and all consumers including commercial and industry sectors. Due to time delays, it will have a negative influence on residential consumers when using dynamic pricing at high load period. In order to get a clear conclusion, this paper compared the cost effects caused by using regular pricing and using dynamic price, using an analysis between case 1 and case 2. As shown in Fig. 6, every month of all spending on electricity using dynamic price is higher than that using regular price. In July, August and September, the cost of using dynamic price is about 67% higher than that using regular price.



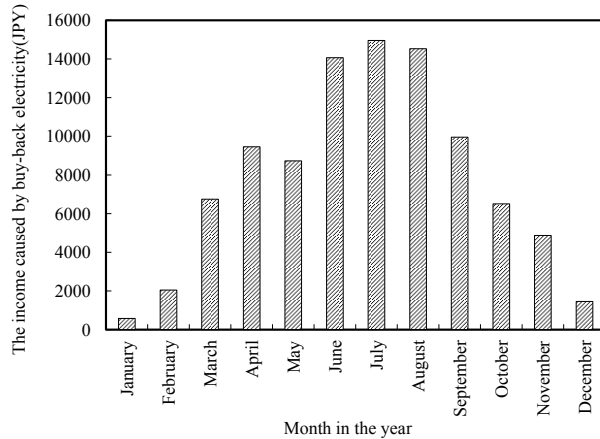
**Fig. 6 Total cost comparison between regular price and dynamic price in residential house**



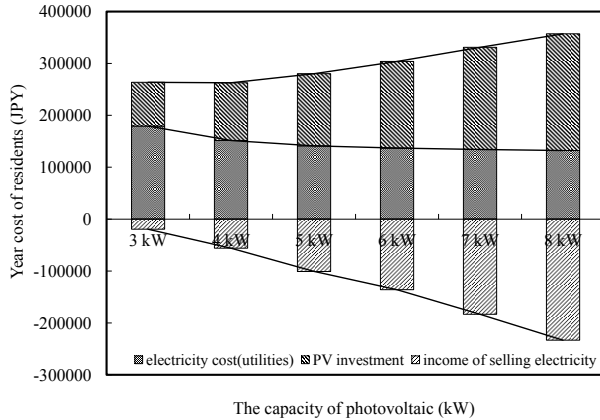
**Fig. 7 Total year electricity cost of three cases**

### 3.2 Total cost of residential side influenced by the import of photovoltaic

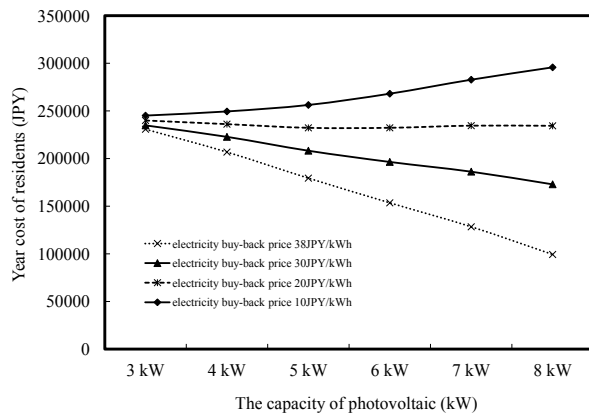
Dynamic pricing is a demand-response method that can give consumers incentives to consume less when the system is highly stressed. It is an essential way of optimizing power grid. However, residents who use dynamic pricing will suffer economic losses if they want to maintain their original lifestyle unchanged. So it is important for us to make a balance between residential consumers' benefit and the whole grid's improvement.



**Fig. 8 The profit of buy-back electricity powered by PV**



**Fig. 9 Component of annual cost of residents**



**Fig. 10 Effect of buy-back price on choosing capacity of PV**

### 3.2.1 The effect of photovoltaic on the cost performance from residential side

Here, we assume that photovoltaic was introduced into the residential side. The generating capacity of photovoltaic is mainly decided by isolation; it can satisfy the electricity consumption of residential side partly. Meanwhile, when the isolation is high, we can also sell the extra electricity to the power company, using this way to get certain profit.

As shown in Fig. 7, we can see that the total electricity cost of case 3 (equipped with photovoltaic) is lower than the cost of cases 1 and 2. Compared with case 2, the cost decrease ratio reached 35.45% which proved that the introduction of photovoltaic is conducive to reducing residents' extra fee caused by using dynamic price. Introducing photovoltaic can solve the contradiction between the improvement of whole grid and the residential consumers' benefit. Fig. 8 shows the income situation produced by photovoltaic.

Fig. 9 shows the component of annual electricity cost of residential consumers. As anticipated, the cost of system initial investment has a linear increase in capacity. The cost for electricity purchase is decreased as the PV capacity increased. However, the amount of decrease is very slightly. This is because the electricity purchased is mainly for night use, and at that time the generation of PV is almost close to zero.

It is also can seen from Fig. 9 that the income of selling electricity is increased as the PV capacity increases and the growth of initial investment is not as fast as that of income of selling extra electricity generated by PV. Therefore, at the current electricity buy-back price 38JPY/kWh, the total annual electricity cost of residents decreased with the increasing of PV's capacity.

### 3.2.2 The effect of buy-back pricing on choosing the capacity of photovoltaic appropriately

In addition, the capacity of photovoltaic is not the bigger the better with the change in buy-back price. In Fig. 10, it can be seen that when the buy-back

price is 38JPY/kWh, the capacity of PV is the bigger the better. If the buy-back price continued reduction to 20 JPY/kWh, with the increase of PV's capacity, the year electricity cost of residents decreases first, and then starts to increase. When the buy-back price reaches 10 JPY/kWh, the year electricity cost of residents starts to increase with PV's capacity.

#### 4. Conclusion

This paper explores the effects of dynamic pricing and photovoltaic technology on the cost performance in a residential house. It was found that it has no economic benefit for residents to use dynamic pricing if they maintain their original lifestyle. To compensate for this tough situation, photovoltaic technology was supposed to be introduced into residential side. Through calculations, we reached the conclusion that it is feasible to introduce photovoltaic technology into the residential side to reduce extra fees caused by using DP. Specific conclusions can be drawn as follows:

- (1) Total spending on electricity each month making use of dynamic pricing is higher than that using regular pricing. In July, August and September, the cost of using dynamic price is about 67% higher than that using regular price.
- (3) Introducing photovoltaic technology can solve the contradiction between the improvement of the whole grid and the residential consumers' benefit. Compared to consumers using dynamic pricing who are not equipped with photovoltaic technology, the cost reduction ratio can reach 35.45%.
- (4) Buy-back price can strongly influenced the choice of photovoltaic capacity. The capacity of photovoltaic is not the bigger the better in the change

of buy-back price. When the buy-back price is 38 JPY/kWh, the annual electricity cost of residents decreased with the increasing of PV capacity. When the buy-back price is 20 JPY/kWh, with the increase of PV capacity, the annual electricity cost of residents decreased at first, and then start to increase. When the buy-back price is 10 JPY/kWh, the annual electricity cost of residents increased with PV capacity.

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# Needs of Support Considered from the Free Description of the Sleep Survey for Normal Children and Disabled Children

発達障害の子どもは健常な子よりも高率に睡眠障害を持っている。それが養育者の愛着形成を妨げ、育児ストレスを引き起こすのだ。その対策は……

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## Abstract

There is a distinctive difficulty in raising disabled children. It is reported that such difficulty causes hard upbringing for their family including parents, frequently merges sleep disorders to ADHD and PDD, and is also one of the factors of abuse. We conducted a questionnaire survey in order to clarify parents' needs for support from the free description of sleep survey for normal children and disabled children, and analyzed the answers obtained from the parents of 144 disabled children (55.6%) and 68 normal children (26.0%). Among parents of disabled children, needs for support were classified into: "parental anxiety and concern," "demand for government," "problems from developmental disorder," "demand for community and society," "parents' own trouble and heartache," "cooperation and understanding of the family." Those among parents of normal children were the following: "parental anxiety and concern," "demand for government," "health problem," "demand for the family," "demand for community and society," and "others." From the above results, the differences and characteristics became apparent. Among the parents of disabled children, life security after the death of parents, demand for government or community and society, and cooperation of their husband and family were especially urgent concerns; and the parental anxiety and concern common in two groups were found to be different in detail. It is determined from these needs that the demand for government and noncooperation from the family greatly affects the mother's parenting stress and anxiety, and from the viewpoint of description about divorce and abuse, support measures are urgently needed.

**Keywords** ADHD, PDD, Sleep, Abuse, Child care stress

## Introduction

According to a survey of Japan nationwide, the number of children staying up late is rapidly increasing. In the questionnaire survey conducted in 2000, more than 50 percent of the children above fifth grade complained of trouble waking up. Particularly Japanese children tend to stay up late compared to other countries<sup>1)</sup>.

Good quality sleep is especially important for infants in the development phase of the brain <sup>2-4)</sup>. However, when the functions of parenting do not work in the background of the various causes of modern society which the environment surrounding the children is being intricately intertwined, pathology and accident have appeared as elements which form daily life, including sleep, diet, exercise,



interpersonal relationships and stress<sup>5</sup>). Various disturbances of life, such as decline in the quality of sleep, reduction in sleep time, delay of the wake-up time and bedtime, day-night reversal and withdrawing, are considered to be factors for the tendency of the night type in Japanese society which cannot be solved only by the efforts of individuals. Among disabled children whose parents have distinctive difficulty in raising, sleep disorders merge in a high rate compared to healthy children<sup>6-13</sup>), which interferes with the formation of emotional attachment of parents, and the strong parenting stress leads to maltreatment<sup>14,15</sup>). In order to put children to sleep, it is important to have a fixed order and a certain level of leisurely time, which is called “soporific action,” and for parents to have awareness of the children’s need for sleep<sup>16</sup>). However, there are not so many parents who are aware of the importance for children’s sleep and having high discipline consciousness<sup>17</sup>). In addition, the sleep disorder of disabled children is a deep problem for parents, and this problem is a “living pathology” itself, different from normal children. Rebuilding of life in general including sleep of childhood, in the formative years of basic lifestyle, in short, the “life clinical” is especially important<sup>18</sup>).

Therefore, we have conducted a survey research in order to determine the realities of sleep of disabled children and their parents (Shimomura et al, 2011-2013: Academic Research Grant Program: Foundation (C) Issue number: 23593351). Results reveal that parents of disabled children are dramatically different from those of healthy children, such as the decline in the quality of sleep of disabled children including developmental disorder, anxiety about the future of children and parenting stress.

## 1. Sleep survey for disabled children and their parents

From September to late December 2011, we conducted a self-administered questionnaire survey of the 261/1067 parents (collection rate 24.5%) in support schools and developmental disabilities facilities in O Prefecture and developmental disabilities

facilities in I Prefecture, and 262/524 (collection rate 50.0%) children in A Kindergarten and B Kindergarten, which are normal children facilities for comparison. The method of analysis was following: we performed statistical processing using the statistical software SPSS19.0J, set the significance level as 5% and analyzed content of the free description qualitatively. As ethical considerations, we have done this after the approval of the B University Research Ethics Review Committee and with the consent of the collaborators.

### (1) *The basic attributes of respondents*

The average age of parents was  $40.2 \pm 5.6$ , and mothers and fathers account for 93.4% and 4.9% respectively. Mothers’ occupation was following: stay-at-home mother 64.3%, mother with part-time job 19.9%, and mother with full-time job 10%. The average age of children was  $9.1 \pm 4.6$ , and male-to-female ratio was 3:1. Disorders were classified as pervasive developmental disorders that include autism, autism spectrum, Asperger syndrome (PDD) (53.3%); mental retardation due to hereditary, congenital disease (intellectual disability) (28.4%); attention deficit hyperactivity disorder (ADHD) (0.4%); developmental disorder not otherwise specified (0.4%); disorders due to heart disease, etc.; and no answer (11.1%). This data includes not only children with developmental disabilities but also those with other disorders.

## 2. Purpose of research

The purpose of research is to clarify needs for support and thoughts of parents from the contents of the free description through the sleeping survey of disabled children.

## 3. Approach

Subjects: Parents of support schools and facilities in the region K.

Period: From September to late December 2011

**Method:** We conducted a self-administered anonymous questionnaire. We explained the research in advance to the person responsible, asked the person to distribute the questionnaire to the parents and collected it by using the return envelope.

**Content:** General attributes of the disordered children and families, life rhythm of the children, questionnaire and free description of sleep realities.

**Methods of analysis:** Free description was obtained from 145 parents (59.7%) out of 243 parents of disabled children (total response rate of 95.48%, and from 68 parents out of 257 parents of normal children (response rate 49%). We repeated analysis of the two descriptions until there was agreement between the researchers, and finally we ensured reliability by categorizing the contents of each description.

**Ethical considerations:** We obtained approval of the B University Research Ethics Review Committee, with the consent of the subjects regarding the purpose of the study, methods, freedom of participation, protection of personal information, strict storage of data, and publication of results.

## 4. Results

We listed randomly the examples of the actual analysis process of free description obtained from parents with disabled and normal children.

### *Disabled children Description Case 1*

I feel anxiety about the future when I die and nobody can look after my child. Currently there is no anxiety because my husband, my parents, and my brother cooperate with me very well, but I feel anxiety when I think about the years ahead. In addition, I am also anxious about disasters because my child cannot get used to places different from the house, and we do not have contact with people in the community.

### *Analysis*

|              |   |
|--------------|---|
| Researcher A | 1. The fear of life of children in the future<br>2. The anxiety for the duration of cooperation among family members<br>3. Anxiety at the time of a disaster  |
| Researcher B | 1. The fear of life of children in the future<br>2. The anxiety for the duration of cooperation among family members<br>3. Anxiety at the time of a disaster  |
| Researcher C | 1. The fear of life after the death of the parent in the future<br>2. The anxiety for the duration of cooperation among family members<br>3. Anxiety at the time of a disaster                              |
| Integration  | <b>Parental anxiety and concern</b><br>1. The fear of life after the death of the parent in the future<br>2. The anxiety for the duration of cooperation among family members and at the time of a disaster |

### *Disabled children Description Case 2*

Lack of cooperation of the husband. I consult him, but he imposes all the responsibility to me, saying that he is busy and I am the mother. Ultimately we divorced. In the end he tried to cooperate, but it was too late. It is quite tough for parents to have a disabled child. I am supported by my parents and sister who are close to me and consult and cooperate with me. I think it would be painful to be in a place with no acquaintances around me.

### *Disabled children Description Case 3*

I'm always frustrated by the behavior of my disabled son (first grade in junior high school). During the daytime I am supported by support school and helpers, but when he comes home I feel absolutely fed up with his behavior, and it is tough to suppress my emotion. I become desperate when I think this situation will continue. The only salvation is that my husband understands my feelings and looks after our child after he comes home, but it is painful when he is not at home. There is no fun.

### *Disabled children Description Case 4*

My child is already an adult. When he goes for a walk or shopping or is walking to the bus stop to go to the work station, he gets curious glances from

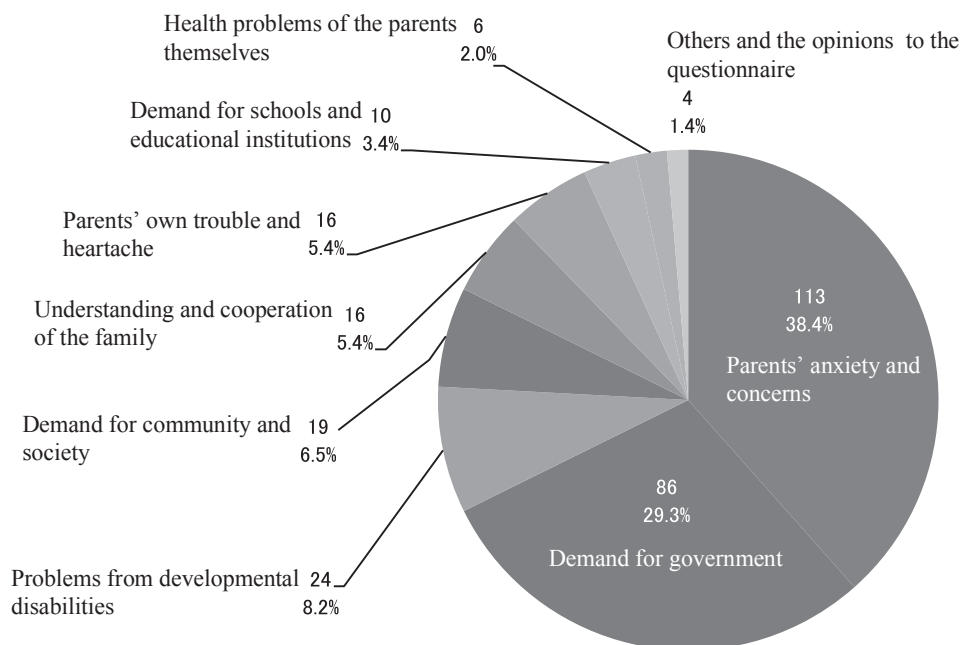
the general public. In worse cases, stones are thrown against him. I want the world to be a place where this kind of things doesn't happen. I want the society to become friendly to the weak. Then the incidents of kidnapping children and injury cases will not happen anymore.

There were 294 items of needs of parent of disabled children, and were classified into 9 categories. Figure 1 shows the results of analyzes of these contents.

The categories of the disabled children in descending order are as follows. "Parental anxiety and concern" 113 (38%), and the main contents were life after the death of the parent, growth and development, self-reliance of children, children's courses, social adjustment, symbiosis with healthy people, and night-type of sleep. "Demand for government" was 86 (29%), and the main contents were panic, sleep disorders, involvement with people, behavior, hypersensitivity of sensory organs, withdrawal and

others. "Demand for society" was 19 (7%) and the main contents were understanding of the specific developmental disorder, society in which people can live normally, assistance to people with developmental disabilities and others. "Parents' own trouble and heartache" and "understanding and cooperation of the family" were both 16 (6%), and the former main contents were childcare fatigue, parenting stress, conflict of mother, and the despair for the current situation. The latter was mainly about husbands; childcare cooperation, lack of understanding of childcare, demand for coming home early, disturbance of life, childcare cooperation of grandparents and brothers/sisters and others.

"Demand for schools and educational institutions" was 10 (3%) and the main contents were the understanding and quality level of teachers, and support education. "Health problems of the parents themselves" was 6 (2%), and the main contents were sleep disorders, peace of mind and others. "Others



**Fig. 1 Needs for support of parents of disabled children**

and the opinions to the questionnaire” was 4 (1%). It was classified into 9 categories above.

Next, we again analyzed some description contents of normal children randomly in order to compare the needs of parents of disabled children and normal children.

#### ***Normal children Description Case 1***

I want to let my children play safely. I want to let them go to lessons. Kick the children out because of the declining academic abilities and parents’ circumstances.

#### ***Analysis***

|              |  |
|--------------|--|
| Researcher A | A safe environment, education for children, neglect of the parent              |
| Researcher B | A safe environment to play, education for children                             |
| Researcher C | A safe environment to play, education for children                             |
| Integration  | <b>Thoughts of parents</b> (Safe environment: playing, education for children) |

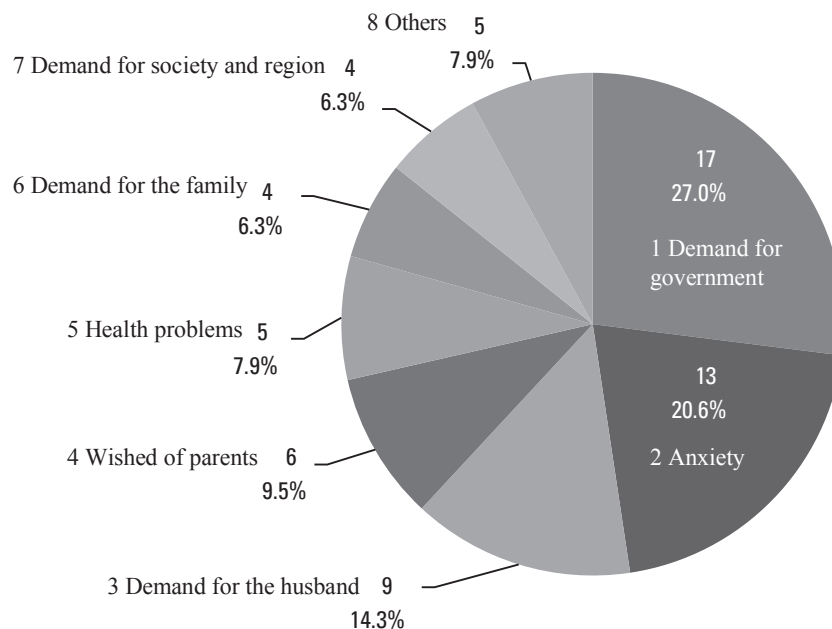
#### ***Normal children Description Case 2***

I want the municipal governments to increase large parks where children can play with confidence. I want more parks in which children can play with balls. I want the control over the bicycles to be tightened because we cannot walk on the sidewalk with confidence due to them because cyclists ignore the signals and listen to music through earphones.

#### ***Normal children Description Case 3***

I have anxiety about the difference in grades of children which occur from the difference between the economic powers of the parents.

We analyzed the description of 168 parents of normal children in the same way as those of disabled children. As a result, their needs were classified into 63 items and 8 categories. The category of the normal children in descending order is following: “demand for government” were 17 (27%), and the main contents were the improvement of child care



**Fig. 2 Needs of support for parents of normal children**



support and institutional, making the medical costs and vaccination free, security measures, structure and enhance of the education level, reduction of tuition, measures of children on waiting lists and others. “Parents’ own trouble” was 13 (21%), and the main contents were growth and eating behavior of children, the future of children, radioactive contamination, climate, politics, economics, education of children, education gap, educational expenses, changes in the educational environment, school life, relationships with friends and others. “Demand for husband” was 9 (14%), and the main contents were about discipline (too strict or too spoiling), non-smoking, staying up too late, the time of returning home and others. “Wishes of parents” were 6 (10%), and the main contents were relationships with friends, growth of children, independence, happiness of children, improvement of the rhythm of life and others. “Health problems” were 5 (8%), and the main contents were childcare cooperation, discipline and spoiling of grandparents and others. “Demand for society” was 4 (6%), and the main contents were enforcing traffic rules and safe driving, urban development where girls can walk with confidence: patrolling, and others. 5 items of “others” (8%) were parenting stress, concern to the net social, behavior problems of children, and others. Figure 2 below shows the analysis of these contents.

## 5. Discussion

There was a big difference in priorities and needs of support between the categories of parents of disabled children and normal children. The top category among parents of disabled children was “parental anxiety and concern,” and the most common concern was “life security after the death of the parent,” compelling concerns of parents about the life of children’s future including economic anxieties. The independence of children (wages) and social adjustment also account much for parents’ anxiety, and demand for educational support for children with developmental disorders, vocational training, employment, etc. rep-

resent the inadequacy of welfare policy and support system current in Japan. On the other hand, the top category of normal children was “demand for government” which includes the improvement of child-care support and institutions, making the medical costs and vaccination free, security measures, structure and enhance of the education level, reduction of tuition, measures of children on waiting lists and others. Subsequently the parents’ own troubles including growth and eating behavior of children, the future of children (radioactive contamination), education of children, education gap. In addition, in the demand for family, that for the husband was especially strong. In these cases, mothers are often supported by grandparents and brothers/sisters nearby, rather than husbands, and because this description was seen in both disordered and normal children, the need of child care support for both parents has been suggested. In the end, the most notable and serious description of disabled children regarded the lack of understanding and correspondence of people in general who support daily life toward developmental disorders. This has been largely responsible for child-care fatigue, parenting stress and emotional attachment formation of parents, especially mothers. In the field of education like kindergartens, nursery schools, schools and support schools, parents’ needs including the lack of understanding of teachers and other caregivers, deficiencies of facilities and systems, education content, education system qualities of teachers have become apparent. In addition, because there was a description of “night-type of sleep” obtained only from the parents of disabled children, the result of this study which supports the research report that the sleep disorders occur at high rates among disabled children, especially children with autism. Strengthening of the sleep-wake rhythm, which is a major base to adjust the lifestyle, leads to improvement of developmental disabilities<sup>19)</sup>, and is linked to improvement in the degree of fatigue of disabled children, the activation of cerebral, and prevention of malaise, sleep disorders, obesity, and truancy. In the rebuilding of life, including lifestyle, external factors involved in

complex life in general of parents and disabled children greatly affect, so there is a limit to the personal effort of parents. However, when the sleep of the parent is regular, that of children is also regular, so it is pointed that sleep consideration of parents affects the falling asleep, sleep maintenance and sleep health index<sup>20)</sup>. In addition, Hayama et al (2011) says in the behavioral science approach to sleep problems in children under 5 years of age that behavioral insomnia in children of “discipline-deficient” (Diagnostic criteria for behavioral insomnia of childhood of American Academy of Sleep Medicine, 2010) has a relationship of reinforcement positive between parental nurturing behavior, and that avoiding child support action enhancing the behavioral insomnia in children leads to the prevention of sleep disorders and improves sleep<sup>21)</sup>, which shows the need for sleep education for parents. For the preventive parent education methods for sleep, there is a behavioral science approach by sleep problems in children by the American Academy of Sleep Medicine intended for healthy children. Soporific action includes bathing, brushing the teeth, change of clothes, picture-book reading as aggressive ritual, and lullaby, as a program. It has been reported that there is a protective effect only by distributing documents written appropriate preventive action to prevent sleep problems<sup>21)</sup>, so a sleep improvement program that is based on the individuality of the child is required. Other descriptions seen only among children disabled was the panic, sleep disorder, hypersensitivity of sensory organs and withdrawing of disabled children specific which could be the cause of parenting stress and childcare fatigue of parents, and conflict of the mother, despair for the status quo. These show not only the anxiety and concerns of parents, especially mothers of disabled children, but also the lack of clear mental and physical; and occurrence of mal-treatment and abuse is predicted. There is a need of support which does not place an excessive psychological burden on the mother, the early diagnosis and treatment by specialists, providing information necessary for the guidance of parents, adjustment of the environment, in

which mothers can engage in childcare with ease by cooperation of husband and family, parenting class, child-care support, support system such as making a “development support center & secure call center at the time of trouble” 24-hours a day by specialists (Japan Federation of developmental disorders<sup>16)</sup>, guardian system when necessary, and provision of information such as “life insurance trust type.”

## 6. Conclusion

Enhancement of such facilities and systems required by the parents leads to the reduction of fatigue from child-care and excessive parenting stress of mothers. In addition, there is an urgent need to promote the dissemination of correct knowledge of the sleep education<sup>17, 22)</sup>. These efforts will lead to prevention of aggravating factors of developmental disabilities and mal-treatments<sup>23)</sup>. However, in order to promote the program of sleep improvement in accordance with the level of understanding and action of developmental disorders specific, it is necessary to consider the actual situation and countermeasures of more detailed sleep disorders. I want to deepen the research further in the 2014-2016 fiscal year Academic Research Grant Fund Foundation (C) Issue number: 26463436 “Research on life clinical based on sleep improvement program for children of developmental disorders.”

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# 小学生の夜型化、イライラの改善に 与える睡眠教育パッケージの効果

——睡眠教育群と待機群の比較——

Contemporary elementary school children have become increasingly nocturnal, causing young people to be more irritable during the day. This research examines education regarding sleep in order to obtain good quality sleep.

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## 要旨

本研究では、睡眠教育パッケージを用いた睡眠授業が、小学生の夜型化やイライラの改善に与える効果について検討することを目的とした。小学校2校の児童143名(4～6年生)を対象とした。A校の児童(睡眠教育群 n=72)には睡眠教育パッケージを実施し、B校の児童(n=71)は待機群とした。小学生用に作成した教材を使用し、学年ごとに睡眠授業を行った。まず睡眠に関する知識を与えていない状態で〇×クイズに回答を求め、回答後に知識教育を行った。次に、調査票を用いて、睡眠状態や生活習慣のチェックを行った。生活習慣チェックの際には「△」の中から目標を1つ選択させ、2週間の日誌によるセルフモニタリングを教示した。知識教育の効果を確認するため、授業後も〇×クイズを実施した。また、2週間後に〇×クイズや睡眠状態の評価、生活習慣のチェックを行った。一方、待機群には睡眠教育群と同じ時期に調査票への回答を求めた。睡眠授業の結果、睡眠教育群の睡眠知識は授業前から授業後に有意に増加し、2週間後も維持されていた。また「朝、太陽の光を浴びる」等の睡眠に有効な習慣行動にも有意な改善がみられた。こうした睡眠知識、習慣行動の改善に伴って、睡眠教育群では就床時刻が前進し睡眠時間が増加して、イライラや睡眠不足が改善したことがわかった。以上、本研究より、睡眠教育パッケージは夜型化防止、睡眠時間の確保に有効であり、イライラを軽減させることが示唆された。

**キーワード** 睡眠教育、セルフモニタリング、睡眠不足、イライラ、小学生

## 1. 問題と目的

近年、日中の眠気増加が心身健康の悪化に影響していることが問題とされている。特に、小学生にみられる日中の眠気増加はイライラの程度を強め、学校の楽しさの減少に関連することが指摘されている(田村・田中, 2013)。また、夜型で、学校での居眠りが多い者ほど、キレやすく、気分の調節不全を起こしやすいことも指摘されており(服部, 2012)、子ども達の心身健康の悪化に日中の眠気が強くかかわっている。こうした日中の眠気の背景に

は、現代の子ども達における生活の夜型化や睡眠時間の短縮が指摘されており、睡眠の不足状態が日中の眠気を強めると報告されている(田村・田中, 2013)。したがって、心身の健康と密接に関係する睡眠の確保は、生活の夜型化、睡眠時間の短縮が指摘される小学生にとって、健康生活や能力発揮の観点からも極めて重要であり、社会的急務といえる。

我々はこれまで、思春期の生徒を対象に、心身の健康保全に関わる適正な睡眠確保を目的とした生活習慣について探索的研究を重ねてきた(Tanaka *et al.*, 2002)。その結果、健全な睡眠の維持・増進に



は、①朝、生体リズムを整える、②帰宅後の居眠りを慎む、③就床前は、脳と心身をリラックスさせること等が重要であることを指摘した。実際に、小学生を対象に上記の重要ポイントを含めた睡眠教育パッケージ（睡眠教育と目標のセルフモニタリング）を指導した研究では、生活の夜型化防止、睡眠時間の確保に有効であり、睡眠不足やイライラの軽減にも効果的であると報告されている（田村・田中，2014）。一方、この研究では待機群が設定されていないため、睡眠教育パッケージの効果を吟味していくためには待機群との比較が不可欠であると考えられる。

そこで本研究では、睡眠教育パッケージを用いた睡眠授業が、小学生の夜型化やイライラの改善に与える効果について比較検討することを目的とした。

## 2. 方法

### 2.1 対象者

本調査は、広島県内の中央部に位置し、人口約19万人の市内にある2校の公立小学校にて実施した。対象は通常学級に在籍する4年生から6年生の児童148名であった。一方は睡眠教育群（ $n = 72$ ：4年生26名；5年生21名；6年生25名）、もう一方は待機群（ $n = 71$ ：4年生23名；5年生24名；6年生24名）に振り分けた。

本調査は、小学生の生活改善を測る取り組みの一環として、学校長から睡眠教育の依頼を受けて実施した。待機群への倫理的配慮として、本調査では、研究終了後に、児童の保護者や小学校の教員に対して睡眠に関する講義を行った。研究計画に関しては、広島国際大学医療研究倫理委員会の承認を得た。

### 2.2 調査材料

#### (1) 教育材料

##### ① 小学生用の知識教育教材 小学生に睡眠に関

する正しい知識を身につけてもらうため、本研究では睡眠の重要性と睡眠改善に関する知識教育教材を作成し、睡眠授業で実施した。睡眠の重要性に関する知識については「よく寝ないと、頭が働かない」、「よく眠らないと、太りやすくなる」など5つの要素で構成し、睡眠改善に関する知識は「朝、起きたら、太陽の光をしっかりと浴びて、体の時計（リズム）を合わせる」などの要素で構成した。この他にも、寝不足が脳や体に与える影響や、良質な睡眠確保につながる習慣行動に関する内容を含めて構成した。

② 睡眠知識（○×クイズ） 睡眠に関連した知識を問うものであり、10項目2件法（1：正解、0：不正解）で構成した。睡眠知識の内容は、主に思春期の生徒に関するものであり（表1参照）、睡眠の重要性と睡眠改善の知識で構成した。合計得点は0～10点の範囲で得点化され、高得点ほど、睡眠に関する正しい知識を有していることを示している。

③ 生活リズムチェック 習慣行動については、睡眠障害の対応と治療ガイドライン（内山，2002）、中学生用の生活習慣チェックリスト（Tanaka & Furutani, 2012）を参考に、睡眠に重要とされている10項目の習慣行動から構成した。各々の習慣行動に対して、「すでにできていること」には○、「頑張ればできそうなこと」には△、「できないこと」には×で回答を求めた。合計得点は0～20点の範囲で得点化され、高得点ほど、睡眠に有効な習慣行動を実践していることを示している。

④ 睡眠日誌 毎日の睡眠状態について児童自身が記録するものであり、就床時刻、睡眠時間を連日記録することによって、睡眠覚醒リズムについて児童自身の認識を高めるのに有効である。本研究では就床時刻、起床時刻、起床時の気分、目標行動の記録で構成した。睡眠日誌への記入は、朝の会で記録できるよう学校長およびクラス担任に協力を求めた。

#### (2) 評価項目

②睡眠知識（○×クイズ）、③生活リズムチェックに加え、

⑤ **睡眠、日中の状態調査票** 調査票には児童自身の睡眠習慣、睡眠や日中の状態についての項目を含めた。睡眠習慣に関しては就床時刻、起床時刻についてたずねた。睡眠時間については、教員とのやり取りの中で質問紙に含めることが出来なかったため、就床時刻と起床時刻の差を睡眠時間として扱った。日中の状態に関しては日中の眠気やイライラなど8項目について測定した。日中の状態に関する質問は、1) イライラ、2) 眠気、3) 学校の楽しさ、4) あくび、5) 注意散漫、6) 授業への集中、7) 意欲、8) だるさ、で構成した。各々の質問について該当の有無をたずねた。「該当あり」は各々の質問に対する正反応として扱った。また、睡眠状態を確認するため、以下の質問を組み合わせた。

1. 夜間、寝つくのに時間はかかりますか？
2. ふだん、寝不足だと思いますか？（思う、思わない）
3. 朝、目が覚めたときの気分はどうですか？（とても良い、良い、悪い、とても悪い）

なお、質問3に関しては「悪い」「とても悪い」の割合を算出した。

## 2.3 手続き

睡眠改善インストラクター（睡眠に関する適正な知識と技術を用いて、睡眠改善支援が実践でき、普及に貢献できる人材として、一般社団法人日本睡眠改善協議会により認定される資格）1名が授業者として、保健体育の授業で、学年ごとに45分の授業を行った（授業は6月下旬に、効果評価は、その2週間後の7月上旬に実施）。まず、睡眠に関する知識を与えていない状態で、○×クイズの「授業前」に回答を求め、回答終了後、教材を用いて、約20分の睡眠に関する知識教育を行った。知識教育では○×クイズの正解に併せて、寝不足が脳や体に与える影響や、良質な睡眠確保につながる習慣行動について解説を行った。次に、睡眠と日中の状態調査票や生活リズムチェックを用いて、15分程度の睡眠状態や生活習慣のチェックを行った。生活習慣の

チェックを行う際は、「△」の中から目標を1つ選択させた。その後、日誌の記入方法を10分程度で指導し、2週間、目標をセルフモニタリングするよう教示した。最後に、知識教育の効果を確認するため授業直後も○×クイズを実施した。また、2週間後に○×クイズ、睡眠と日中の状態調査票や生活リズムチェックを実施した。一方、待機群の児童に対しては、睡眠教育群と同じ時期に2回、睡眠と日中の状態調査票、生活リズムチェックに回答を求めた。

## 2.4 解析方法

まず、睡眠教育群と待機群の授業前の群間差を検討するため、対応のない $t$ 検定を行った。次に、睡眠知識、習慣行動、睡眠習慣の変化を検討するため、群（睡眠教育群、待機群）と時期（授業前、2週間後）の2要因分散分析を行い、交互作用が有意であった場合は単純主効果の検定、多重比較を行った。さらに、睡眠教育群における睡眠知識の変化を項目別に検討するため、Cochranの $Q$ 検定を行い、有意差がみられた場合は下位検定として、McNemarの検定を行った。その際、有意水準はBonferroni補正を行った。習慣行動については、群ごとにMcNemarの拡張検定を実施した。

# 3. 結果

## 3.1 介入前の状態

小学生の就床・起床時刻、および睡眠時間を表2に示した。また、図3に日中の状態に関する割合を示した。授業前では、睡眠教育群および待機群を含めた全体の44.6%が22時以降に就床していることが示された。また、全体の66%が睡眠不足を、43.1%がイライラを訴えていた。これらの睡眠習慣や睡眠、日中の状態に対して、 $t$ 検定および $\chi^2$ 検定を実施した結果、すべての指標に関して両群に統計的な有意差は示されなかった。

### 3.2 睡眠知識の変化

睡眠教育群における睡眠知識の変化について検討した結果、授業前から授業後、2週間後に睡眠知識の合計点が増加したことがわかった (図1)。分散分析の結果、時期の主効果に有意差がみられ ( $F_{(1,136)} = 15.81, p < .001$ )、多重比較の結果、睡眠知識の合計点が授業前 (平均  $\pm$ SD :  $9.39 \pm 1.10$ ) に比べて授業後 ( $9.99 \pm 0.12$ )、2週間後 ( $9.86 \pm 0.39$ ) に有意に増加したことが示された。そこで、

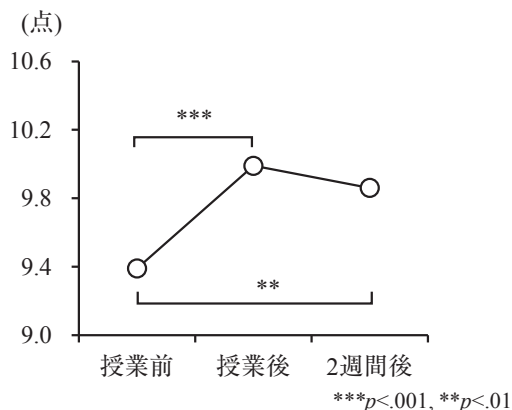


図1 睡眠教育群における睡眠知識の変化

知識教育によってどのような知識が増加したかを検討するため、項目別に検討したところ (表1)、「よく眠らないと太る」という知識の割合は、授業前では89.9%であったが、授業後は100%になり、2週間後も高い割合で維持されていることが示された。CochranのQ検定の結果、正答率に有意差がみられ ( $\chi^2_{(2)} = 6.99, p < .05$ )、McNemarの検定の結果、授業後に正答率が有意に向上したことがわかった。また、「学校から帰って、夕方眠くなっても寝ない方がよい」等の睡眠改善の知識の正答率も、授業前から授業後に有意に向上し2週間後も維持されていることがわかった ( $\chi^2_{(2)} = 8.50, p < .01$ )。

### 3.3 習慣行動と睡眠習慣における変化

習慣行動の合計得点について検討した結果、睡眠教育群では授業前に13.66点であったが、2週間後には15.44点に合計得点が増加したことがわかった (図2)。分散分析の結果、群と時期の交互作用に有意差がみられた ( $F_{1,136} = 15.81, p < .001$ )。単純主効果の検定の結果、睡眠教育群に有意差がみられ、2週間後に有意に習慣行動の合計得点が増加したことがわかった。また、効果量を算出した結

表1 睡眠教育群における授業前、授業後、2週間後の睡眠知識の変化

| 小学生用 睡眠知識 (○×クイズ)               | 解答 | 睡眠教育群  |        |        | Q      | Post hoc <sup>#</sup> |
|---------------------------------|----|--------|--------|--------|--------|-----------------------|
|                                 |    | 授業前    | 授業後    | 2週間後   |        |                       |
| 1. 早寝、早起き、朝ごはんは頭や体に良い?          | ○  | 98.6 % | 100 %  | 100 %  | 1.50   |                       |
| 2. 朝ごはんや朝うんちは元気のもと?             | ○  | 98.6 % | 100 %  | 100 %  | 1.50   |                       |
| 3. よく寝ないとドジったり、ケガしやすくなる?        | ○  | 94.2 % | 100 %  | 100 %  | 6.09*  | n.s.                  |
| 4. よく寝ないと頭が働かない?                | ○  | 98.6 % | 100 %  | 100 %  | 1.50   |                       |
| 5. よく眠らないと太る?                   | ○  | 89.9 % | 100 %  | 98.6 % | 6.99** | 授業前<授業後               |
| 6. 人間の体にはリズムがある?                | ○  | 98.6 % | 100 %  | 100 %  | 1.50   |                       |
| 7. 朝、太陽の光を浴びると良い?               | ○  | 94.2 % | 100 %  | 100 %  | 6.09*  | n.s.                  |
| 8. 学校から帰って、夕方眠くなったら寝た方がよい?      | ×  | 88.4 % | 100 %  | 98.6 % | 8.50** | 授業前<授業後, 2週間後         |
| 9. 眠りが足りなかったときは、休みの日は昼まで眠るのが良い? | ×  | 100 %  | 100 %  | 97.1 % | 3.02   |                       |
| 10. 寝る前はコンビニなど、明るい所へ行かない方がよい?   | ○  | 78.3 % | 98.6 % | 91.3 % | 6.15*  | 授業前<授業後               |

\*\* $p < .01$ , \* $p < .05$ , # $p < .016$  (Bonferroni 補正), n.s. = not significant.

果、睡眠教育群では中程度の効果 ( $d = 0.57$ , 95% CI: -0.14-1.28) が認められた (Cohen, 1988)。そこで、項目別に習慣行動の変化について検討するため、群ごとに McNemar の拡張検定を実施した結果

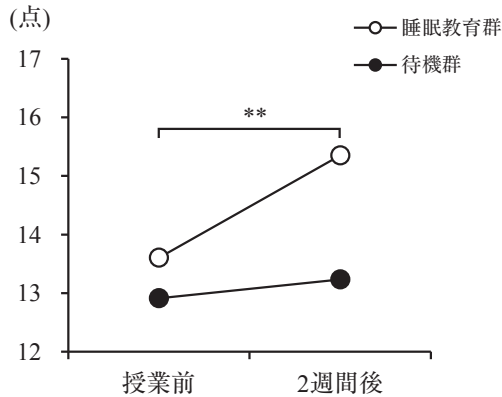


図2 睡眠教育群と待機群における習慣行動の変化

(表2)、「毎朝、ほぼ決まった時間に起きる」に有意差がみられ ( $\chi^2_{(2)}=8.25, p < .01$ )、残差分析の結果、2週間後に「○」と回答した児童の割合が有意に増加したことがわかった。また「朝、起きたら、太陽の光を浴びる」にも有意差が認められ ( $\chi^2_{(2)}=8.12, p < .05$ )、2週間後に有意な改善が示された。「眠る前に、テレビやビデオを見ない」に関しても有意差が認められ ( $\chi^2_{(2)}=9.36, p < .01$ )、2週間後に有意に改善した。この他にも、睡眠教育群では「眠る前に、コンビニなど明るい所へ行かない」、「学校から帰って、夕方寝ない」等の習慣行動に改善傾向が示された。

次に、睡眠教育パッケージが睡眠習慣に与える効果について検討した結果 (表3)、睡眠教育群の就床時刻は平均17分早くなり、睡眠時間が約16分増加したことがわかった。分散分析の結果、就床時刻 ( $F_{1,142} = 19.25, p < .001$ ) と睡眠時間に ( $F_{1,142}$

表2 睡眠教育群と待機群における習慣行動の比較

| 生活リズムチェック項目             |      | 睡眠教育群 |      |      |          | 待機群  |      |      |          |
|-------------------------|------|-------|------|------|----------|------|------|------|----------|
|                         |      | ○     | △    | ×    | $\chi^2$ | ○    | △    | ×    | $\chi^2$ |
| 1. 毎朝、ほぼ決まった時間に起きる      | 授業前  | 38.0  | 53.5 | 8.5  | 8.25 **  | 43.4 | 46.1 | 10.5 | 1.04     |
|                         | 2週間後 | 63.4  | 32.4 | 4.2  |          | 35.5 | 51.3 | 13.2 |          |
| 2. 朝起きたら、太陽の光を浴びる       | 授業前  | 41.4  | 37.1 | 21.4 | 8.12 *   | 40.8 | 42.1 | 17.1 | 0.48     |
|                         | 2週間後 | 57.1  | 37.1 | 5.7  |          | 35.5 | 44.7 | 19.7 |          |
| 3. 朝ごはんを毎日きちんと食べる       | 授業前  | 91.5  | 7.0  | 1.4  | 0.74     | 84.0 | 13.3 | 2.7  | 0.11     |
|                         | 2週間後 | 94.4  | 5.6  | 0.0  |          | 85.3 | 8.0  | 6.7  |          |
| 4. 学校から帰って、夕方寝ない        | 授業前  | 76.8  | 17.4 | 5.8  | 2.80 †   | 73.3 | 13.3 | 13.3 | 2.00     |
|                         | 2週間後 | 88.4  | 8.7  | 2.9  |          | 69.3 | 21.3 | 9.3  |          |
| 5. 休みの日に、朝寝坊しない         | 授業前  | 31.0  | 39.4 | 29.6 | 0.56     | 36.1 | 37.5 | 26.4 | 0.29     |
|                         | 2週間後 | 36.6  | 38.0 | 25.4 |          | 34.7 | 41.7 | 23.6 |          |
| 6. 眠る前に、コンビニなど明るい所へ行かない | 授業前  | 77.5  | 14.1 | 8.5  | 3.69 †   | 75.0 | 11.8 | 13.2 | 3.47 †   |
|                         | 2週間後 | 87.3  | 11.3 | 1.4  |          | 86.8 | 6.6  | 6.6  |          |
| 7. 眠る前に、テレビやビデオを見ない     | 授業前  | 22.5  | 33.8 | 43.7 | 9.36 **  | 25.0 | 43.4 | 31.6 | 0.84     |
|                         | 2週間後 | 46.5  | 26.8 | 26.8 |          | 26.3 | 48.7 | 25.0 |          |
| 8. 眠る前に、ゲームをしない         | 授業前  | 60.6  | 19.7 | 19.7 | 4.98 †   | 61.3 | 24.0 | 14.7 | 0.44     |
|                         | 2週間後 | 60.6  | 31.0 | 8.5  |          | 60.0 | 28.0 | 12.0 |          |
| 9. 毎晩、ほぼ決まった時間に寝る       | 授業前  | 35.7  | 45.7 | 18.6 | 1.66     | 36.8 | 48.7 | 14.5 | 0.56     |
|                         | 2週間後 | 47.1  | 38.6 | 14.3 |          | 39.5 | 50.0 | 10.5 |          |
| 10. 毎日、よく体を動かす、運動する     | 授業前  | 62.0  | 32.4 | 5.6  | 0.18     | 51.3 | 35.5 | 13.2 | 0.26     |
|                         | 2週間後 | 64.8  | 31.0 | 4.2  |          | 48.7 | 39.5 | 11.8 |          |

\*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ , †  $p < .10$



表 3 睡眠教育群と統制群における就床・起床時刻、睡眠時間の比較

|          | 睡眠教育群            |                  |                               |                      | 待機群              |                  |                               |                      |
|----------|------------------|------------------|-------------------------------|----------------------|------------------|------------------|-------------------------------|----------------------|
|          | 平均 (SD)          |                  | 授業前から<br>2週間後の変化量<br>(95% CI) | $d$<br>(95% CI)      | 平均 (SD)          |                  | 授業前から<br>2週間後の変化量<br>(95% CI) | $d$<br>(95% CI)      |
|          | 授業前              | 2週間後             |                               |                      | 授業前              | 2週間後             |                               |                      |
| 就床時刻     | 21:44<br>(00:41) | 21:27<br>(00:38) | -00:17<br>(-00:08-00:26)      | 0.43<br>(0.28-0.58)  | 21:51<br>(00:39) | 21:54<br>(00:39) | 00:03<br>(-00:06-00:12)       | 0.06<br>(-0.08-0.21) |
| 起床時刻     | 5:56<br>(00:26)  | 5:54<br>(00:25)  | -00:02<br>(-00:04-00:08)      | 0.08<br>(-0.02-0.18) | 6:05<br>(00:25)  | 6:06<br>(00:26)  | 00:01<br>(-00:05-00:07)       | 0.02<br>(-0.08-0.12) |
| 睡眠時間 (分) | 491.6<br>(47.1)  | 507.5<br>(43.5)  | 15.8<br>(5.4-26.3)            | 0.34<br>(0.17-0.51)  | 494.2<br>(43.1)  | 492.2<br>(43.3)  | -2.0<br>(-11.7-7.7)           | 0.05<br>(-0.12-0.22) |

95% CI = 信頼区間、 $d$  = 効果量（授業前と2週間後の差を用いて算出）

効果量:  $d$  = .20 小さい,  $d$  = .50 中程度,  $d$  = .80 大きい

= 11.15,  $p < .01$ )、群と時期の交互作用が認められた。単純主効果の検定を行ったところ、睡眠教育群の就床時刻が有意に前進し、また睡眠時間が有意に増加したことがわかった。さらに、睡眠教育群の就床時刻は待機群に比べ有意に早くなったことも示された ( $F_{1,142} = 27.61$ ,  $p < .001$ )。睡眠習慣の各指標について、2週間後の効果量を算出したところ（表2）、睡眠教育群の就床時刻におおむね中程度の効果 ( $d = 0.43$ ) が、睡眠時間に小さい効果 ( $d = 0.34$ ) がそれぞれ示された (Cohen, 1988)。一方、待機群では、睡眠習慣に介入効果は示されなかった。

### 3.4 睡眠、日中の状態の変化

次に、睡眠、日中の状態に関して検討した結果、睡眠教育群においては、授業前に睡眠不足を訴えていた児童の割合は71.8%であったが、2週間後には54.9%に減少した（図2）。McNemarの検定の結果、睡眠不足の割合は待機群に比べ睡眠教育群で有意に減少したことが示された ( $p < .001$ )。また、朝の悪化した気分やイライラを訴えていた児童の割合についても、睡眠教育群において有意に改善していることが確認できた。入眠困難に関しては、睡眠教育群に有意な改善は示されなかったが、2週間後、待機群に比べ、睡眠教育群の割合が有意に低い

ことが示された（睡眠教育群：22.2% vs 待機群：46.1%,  $p < .05$ )。「あくび」に関しては、睡眠教育群で79.2%（授業前）から66.7%（2週間後）に改善傾向が示された。また、腰痛を訴えていた子どもの割合は授業前では31.9%であったが、2週間後には23.6%になった。日中の眠気（59.7%（授業前）から52.8%（2週間後））、意欲（44.4%から40.3%）、集中困難（20.8%から18.1%）、学校が楽しくない（43.1%から38.9%）、不注意（36.1%から37.5%）だるい（65.3%から55.6%）に関しては、有意な変化は認められなかった。一方、待機群では授業前後で変化のみられた項目は確認されなかった。

## 4. 考察

本研究では、4年生から6年生の児童を対象に、睡眠教育パッケージの効果を実証的に検討するため、睡眠教育群と待機群に分け、睡眠教育パッケージが就床時刻や睡眠、イライラの改善に与える効果について比較検討することを目的とした。その結果、睡眠教育群の就床時刻は有意に改善し、睡眠時間に増加が示された。また、睡眠教育群では、睡眠

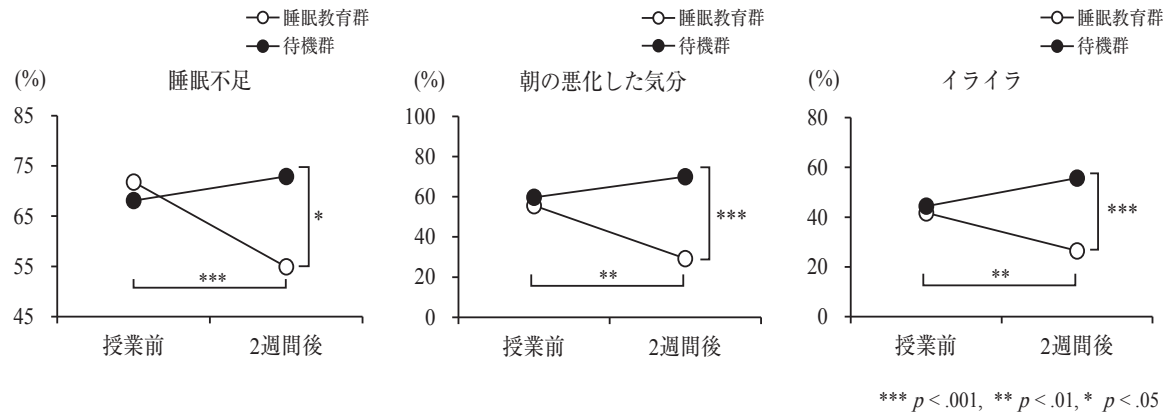


図3 睡眠教育群と待機群における睡眠不足、イライラの群間比較

不足やイライラを訴える児童の割合も有意に減少したことが明らかとなった。

#### 4.1 睡眠に関する適正な知識教育の効果

睡眠授業の効果を検討するため、睡眠知識の変化について検討した。その結果、○×クイズの合計点は授業前に比べ、授業後に向上し、2週間後も高得点で維持されていることがわかった。そこで、睡眠授業によってどのような知識が促進されたのかを検討したところ、「よく眠らないと太る」という睡眠不足の影響に関する知識が有意に向上したことが確認できた。さらに、「学校から帰って、夕方眠くなっても寝ない方が良い」という睡眠改善の知識にも有意な増加が示された。これらの結果は、小学生には睡眠不足が体に及ぼす影響に関する知識だけでなく、良質な睡眠を確保するための知識も十分に備わっていないことを示唆しており、今後、学校教育の中では睡眠の重要性に併せて、睡眠改善の知識も一緒に教育していくことが重要であることを示していると考えられる。

睡眠教育では快適な睡眠を妨害する、あるいは促進する生活習慣や環境要因についての情報を提供することによって睡眠を妨害する要因を整え、睡眠に有効な生活習慣を促進していくことが重視される

(Hauri, 2004)。睡眠教育は単体で実施された場合でも睡眠改善に有効であるが、近年の多くの研究によれば、行動的介入と併せて実施された場合に、より効果的であることが示唆されている (Tanaka & Furutani, 2012; Thorndike *et al.*, 2013)。本研究でも、睡眠教育にセルフモニタリングを併せた睡眠教育パッケージを実施することで子ども達に良質な睡眠の確保に有効な知識や習慣の獲得が促進され、就床時刻やイライラに改善が認められた。このことは、小学生に関しても、睡眠教育に行動的介入を併せた指導が効果的であることを示唆していると同時に、継続して睡眠教育パッケージを実施していくことで、児童の睡眠や日中の問題を改善・予防していくことが可能であることをうかがわせる。

#### 4.2 睡眠教育パッケージの効果

睡眠教育群に対して、睡眠教育と目標のセルフモニタリングを指導した結果、「毎朝、ほぼ決まった時間に起きる」「朝、起きたら、太陽の光を浴びる」「学校から帰って、夕方寝ない」「眠る前に、テレビやビデオを見ない」など、概日リズムの規則性保持に重要な習慣行動が有意に改善した。さらに、これらの変化に伴って睡眠教育群では就床時刻が有意に前進し、睡眠不足やイライラを訴える児童の割合も

有意に減少したことが明らかとなった。一方、待機群の児童では、2週間後に就床時刻、睡眠不足やイライラに有意な差は示されなかった。これらの結果から、概日リズムの規則性保持に重要な習慣行動の改善が子ども達の夜型化防止に寄与した可能性が示唆された。また、これら睡眠に有効な習慣行動のセルフモニタリングは睡眠時間の増加、睡眠不足やイライラの軽減にも効果的な方法であることが示唆された。

早寝を促進するためには、概日リズムと呼ばれる約1日（平均24.2時間）を単位とした体内リズムを24時間の環境周期に同調させる必要がある。概日リズムを環境周期に同調させる因子を同調因子と呼び、光や食事、社会的接触や運動などが知られている (Tanaka & Furutani, 2012)。これら同調因子の中でも、2,500ルクス以上の光は睡眠位相に強く影響し、とくに深部体温の最低点後では睡眠位相を前進させることが明らかにされている (Khalsa *et al.*, 2003)。また、毎朝の起床時刻を一定に保つことも生体時計の調整に重要な役割を果たしており、朝の太陽光への曝露を調整すると考えられている (内山, 2002)。一方で、夕方から就床前にかけての深部体温が低下し始める時間帯に高照度光を浴びると、概日リズムが後退し、自然な入眠時刻が遅くなることが報告されている (原田, 2008)。特に、子どもの場合、大学生に比べて、光に対する感受性が高いことが指摘されているため、就床前は光を調節し脳の興奮を抑え、リラックスできるよう心掛けることが早寝に重要となる (Tanaka & Furutani, 2012)。

したがって、今回、睡眠教育群の児童に、毎朝の起床時刻を一定にし、太陽光を浴びる習慣や、夜間のテレビ視聴を控えるなど就床前の光環境への曝露を抑える習慣が確保されるようになったことで、子ども達の睡眠位相が前進し早寝につながったと推察される。一方、夕方遅くの仮眠は睡眠開始時刻を著しく後退させ、寝つきを悪化させることが指摘されている (Fukuda & Ishihara, 2002)。さらに、夕

方以降の仮眠には徐波睡眠<sup>じょは すいみん</sup>が多く含まれており、夜間睡眠の質を悪化させることも明らかにされていることから (Campbell & Feinberg, 2005)、年齢を問わず、この時間帯での仮眠を慎むこと、適正な覚醒を維持させておくことが重視されている。本研究の結果は、夕方の仮眠を慎むようになった児童に夜型化が改善されたという点で、従来の先行研究の知見を支持している (Fukuda & Ishihara, 2002)。さらに、今後、睡眠教育を実践していく際には、小学生であっても夕方に仮眠をとっている者が存在していることに留意しておくことが、子ども達における睡眠の問題を正しくアセスメントする上で重要であるといえる。

また、今回、睡眠教育パッケージ実施後に、小学生の睡眠時間が有意に増加したことがわかった。さらに、睡眠不足やイライラを訴える児童の割合も2週間後に有意に減少した。睡眠の不足状態を表す授業中の眠気とイライラの関連性を検討した先行研究によれば、授業中の眠気が強い児童ほど、イライラしやすく、怒りっぽいことが報告されている (田村・田中, 2013)。また、睡眠不足時は、睡眠充足<sup>へんとうたい</sup>時に比べ、嫌悪刺激に対する扁桃体 (情動調節に関わる脳部位) の活動強度が大きく、苛立ちやすいことが報告されている (Yoo *et al.*, 2007)。これら先行研究の知見と、本研究の結果を考え合わせると、睡眠時間の増加は睡眠不足を軽減させるのみならず、イライラの改善にも有効であった可能性を示唆している。

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# 外交儀礼をめぐる衝突と調和

——1873年の謁見問題を中心にして——

In Chinese-Japanese relations, should priority be placed on the “sovereignty” or on “reciprocity”? Relations between the two countries are examined, drawing on wisdom attained from historical events regarding diplomatic protocol.

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## 要旨

1873年に日本外務卿副島種臣<sup>そえじまたねおみ</sup>は特命全権大使に任命され、北京に赴いた。彼は北京で謁見問題をめぐり、空前の波瀾を起こした。今回の謁見は何千年もの中国史上、初めて正式に立礼で皇帝に謁見を済ませるといふ、画期的な出来事であった。副島の謁見順位も英、米などの大国をおさえ、第一番目であった。日本側の研究では、副島の対清外交に重点を置き、彼はいかに「国権外交」を実現させたのかを論じている。一方、中国側の研究では、副島に対し批判的な見方が多く、清国側はいかに副島に屈服したのかという過程が注目されているのみである。副島の謁見成功の理由として、先行研究には若干の言及はあるが、いずれも日本側の立場に立ち、副島個人の役割を強調したものと言えるだろう。筆者は1873年の謁見問題を中心として、副島は何故他の使節に先駆け、一人で、三揖の礼（他の使節は五鞠躬<sup>ごきつぎゆう</sup>）で謁見を済ませることができたのか、副島の謁見成功は北洋大臣李鴻章とはどのような関係があったのか、日本側の外交成果だと思われたこの事件はそれ以後の日中関係にどのような影響をもたらしたのか、以上の課題について考察する。

キーワード 外交儀礼、同治帝、副島種臣、李鴻章

## はじめに

日清両国は1871年に「日清修好条規」を締結した。それをきっかけに両国ははじめて対等な姿勢で近代外交に臨むこととなった<sup>1)</sup>。1873年、「日清修好条規」の批准書を交換するため日本側から外務卿副島種臣が特命全権大臣に任命され、清国に派遣された。

副島外務卿の清国派遣に関し、先行研究では特に同治帝への謁見問題が注目されている。副島は謁見した際、中国の伝統的な礼儀作法に従わず、立礼、単独で拱手（両手を組み合わせて胸元で上下する）<sup>きようしゆ</sup>の礼を施しただけであった。ゆえに、日本側の研究

では副島のこの行動を「国権外交」と高く評価している<sup>2)</sup>。一方、中国側の研究では、副島に対し批判的な見方が多く、清国側はいかに副島に屈服したのかという過程が注目されているのみである<sup>3)</sup>。副島は何故他の使節に先駆け、一人で、三揖の礼（他の使節は五鞠躬）で謁見を済ませることができたのか。副島謁見成功の要素として、先行研究で注目しているマリア・ルス号事件<sup>4)</sup>のほかにも何か考えられないだろうか。また副島の謁見成功は、北洋大臣李鴻章とはどのような関係にあったのか。日本側の外交成果だと思われたこの事件は、それ以後の日中関係にどのような影響をもたらしたのか。本稿では以上の問題を解明することを目的とする。

## 1 1873 年以前の謁見事情

アヘン戦争以後、中国は開国を余儀なくされ、列強に蚕食される対象になった。しかし、清国は依然として、新しい世界秩序を認めようとはせず、外国との関係も僅かな貿易のみに限られていた。アロー戦争(第二次アヘン戦争)で負けた結果、清国は各国使節の北京駐在を認めた。1861年に総理各国事務衙門(総理衙門、総署ともいう)が設立され、謁見問題もそれと同時に避けられない問題として浮上してきたのである。

実は、清国が開国される前に、すでに謁見の儀礼作法に関する論争が存在していた。1793(乾隆58)年、イギリスからマカートニー(George Macartney)使節団が派遣されてきた。清の統治者たちはイギリスを朝鮮、琉球などの朝貢国と同一視し、「三跪九叩」の礼を要求した。しかし、マカートニーはこの要求をイギリスの尊厳と名誉に対する侮辱だと考え、対等の礼を要求した。結局、清国側は度量の大きさを示すため、マカートニーがイギリスの国王に謁見するときと同じような礼で謁見することを認めた<sup>5)</sup>。また1816年イギリスからアマースト(William Pitt Amherst)使節団が清国に訪れた。彼も中国の儀礼に従わないため、嘉慶帝(在位1796－1820)を怒らせた。その結果、清国側は使節を謁見させずに帰らせたのである<sup>6)</sup>。

この二回の代表的な謁見をめぐる衝突を見ると、清国は自尊自大的な考え方をもち、イギリスを対等の国とは見做さず、自国の作法をイギリスに厳しく押し付けたことは明らかである。

1860年に英仏連合軍が北京まで攻めたため、咸豊帝は熱河(今の承德市)まで逃走し、そこで崩御した。清国はイギリス、フランス、ロシアとの間に「北京条約」を締結し、各国使節が首都北京に常駐することを認めたため、謁見問題がまた浮上してきた。このときの清国は全く不利な状況にあったゆえ、謁見に対し消極的な態度をとった。1862年、同治帝はわずか5歳で即位したため、両宮皇太后

(東太后、西太后)が垂簾聽政(幼帝に代わって政治をみること)を行った。清国側は皇帝がまだ親政していないという口実で謁見を断ったが、実は儀礼の紛争を避けるためであろう。

## 2 1873 年の謁見問題

同治帝の大婚と親政を祝うため、2月24日(1月27日)ロシア、ドイツ、アメリカ、イギリス、フランス五国公使はともに謁見を要求する照会文を提出した<sup>7)</sup>。その照会文を皮切りに、激しい交渉が行われ、清国内部ではさまざまな意見が出てきた。

### 2.1 清国側の意見

呉大澂(翰林院代通編修)は中国の「旧制」の儀礼作法を取り上げ、外国使節が謁見するときは、中国の跪拝礼を守るべきだと主張した。中国の使節は外国ですでに外国の儀礼を遵守したため、外国使節も中国の儀礼作法を守るべきであると強調した。さらに、長い目で見れば外国人の不相応な要求を遮断するため、謁見を断るほうがよいという意見すら出てきた<sup>8)</sup>。

呉鴻恩(山東道監察御史)も上奏文を提出し、「外藩」(朝貢国)が謁見するときの儀礼で外国使節を接待すべきだと主張した<sup>9)</sup>。

総理衙門は外国使節と交渉したが、順調にいかなかったため、4月24日(3月28日)に李鴻章に意見を求めた<sup>10)</sup>。ここで、李はどのような意見を述べたのかをみてみたい。

まず、彼は清国がすでに外国と条約を締結し、外国使節が北京に駐在するという状況から分析した。双方は属国関係ではない、そのため朝貢国の礼を強要すべきではないと考えた。

次に、中国の使節は外国で外国の儀礼を守ったが、基本的に外国の使節は中国の儀礼を守る義務がない。それを強要する清国の官員たちは外国事情を知らないだけである。西洋人はすでに長期間にわ

たつて謁見を要求したため、その要求を簡単に断ることができない、と李は呉大澂、呉鴻恩の意見を逐一批判した。

さらに、自ら解決案も呈示した。もし皇帝が謁見を許すとするならば、<sup>あらかじ</sup>予め条文で「各国使臣は北京に来て、ただ一回だけ謁見を許し、二度目の謁見は許さない。ただ各国公使に同時の謁見を許し、一国単独の謁見は許さない。そうすれば、将来の不相応な望みを防ぐことができる」<sup>11)</sup>という条件を提示すべきであるといい、結論として「各国の風習は異なるため、細かいこと<sup>かか</sup>に拘わらずに、度量の広さを示すほうがよい」<sup>12)</sup>と述べ、跪拝礼を強要しなくてもよいという意見を表明した。

その他、謁見をめぐる上奏文や総理衙門への書翰などは多数『籌弁夷務始末』（同治朝）に収録されており、清国内部では論争が絶えなかったことが明らかである。こうして、ついに6月14日（5月20日）に、各国使臣の謁見を認めるという内容の詔書が下された<sup>13)</sup>。

ここで、「揖礼」・「鞠躬」・「跪拝」の意味について簡単に説明する。「揖」とは中国の昔の礼の一つであり、両手を胸の前で組み、これを上下したり前にすすめたりする礼である<sup>14)</sup>。「鞠躬」とは立って腰を曲げるお辞儀<sup>じぎ</sup>をする、上半身を前方へ曲げる敬礼<sup>15)</sup>。一方、「跪拝」とはひざまずいて拝礼する、手とひざを地面につける丁重な礼である<sup>16)</sup>。また、先に述べた<sup>さん き きゅうこう</sup>「三跪九叩」とは、両膝でひざまずいて三拝し、いったん立ち上がってまた前の動作を繰り返す。これを合計三度ひざまずき九回拝する礼であり、旧時、天子や高官に会う時、あるいは孔子の靈位を拝する時などの最高の敬礼である<sup>17)</sup>。明らかに「三跪九叩」の礼は程度のいちばん高い礼儀作法である。

## 2.2 外務卿副島種臣の行動

1873年、日本の外務卿副島種臣は特命全権大使に任命され、北京へ赴いた。副島は清国に行く前に十分な事前調査を行っていた。「副島種臣関係文書」

（国立国会図書館、憲政資料室所蔵）の中に「清帝謁見ニ関スル参考書」（以下「参考書」と略す）<sup>18)</sup>が所蔵されており、国立公文書館に「六年使清日記」が所蔵されている。以下、これらの一次史料を引用しながら副島の行動を考察したい。

「参考書」の表紙のところに、「マルティン氏国際法訳文」と明記されている。マルティン<sup>19)</sup>は国際法の伝授に関しては著名である。その内容には、「接使国の君主より、公謁見を賜むる時ニ、アムバサドルニ限りて受へくして、他の公使の受け能わさる所の時典」を四条にまとめたものがあり、「外国使臣を接待するの礼は、各国の風俗ニ基き改正したるものなり、因て遣使国の体面と、アムバサドル自身の職と恥かしむる非されは、接使国より与えんとする礼典ニ随ひ、而して之を却くる事能わさるなり」という内容もある。これらの予備知識を把握した副島は北京でどのように皇帝に謁見しようとしたのだろうか。

副島は天津で李鴻章と「日清修好条規」の批准書を交換した後、北京へ移動した。李鴻章は孫士達（江蘇記名道）を遣わし、副島一行の面倒を見ると同時に、謁見問題を処理せよと命じた。北京での副島の行動について、「六年使清日記」に詳しく記録されている。副島の北京での動向について三つの注目したい点がある。

まず、今回の謁見は穏やかではない雰囲気<sup>ごうき</sup>に包まれていた。日清双方は約50日間以上（5月7日より6月29日まで）も膠着状態<sup>こうちやく</sup>に入った。交渉が行き詰った状況に対し、清国側は3回（6月1日、3日、6日）の照会文を廃止し、新しい方案（6月8日）を作り出した。

次に、孫士達と副島との交流が頻繁に行われたことが分かる（5月9日、26日、6月2日、5日、6日、8日、14日、15日、16日、23日、24日、26日）。孫は副島から総理衙門への返書を抄録し、李鴻章へ報告した（6月2日、5日）。孫は北京にしながら、李の指図<sup>さしず</sup>を仰ぎ、総理衙門と副島との間を取り持ち、謁見が順調に行われるように、積極的



に動いた。

さらに、副島が北京にいる間、西洋列国公使との交流は親密かつ頻繁であったことも窺える（5月19日、27日、31日、6月3日、7日、9日、18日）。とくにロシア公使とのやり取りは圧倒的に多かった（5月17日、26日、29日、6月2日、4日、10日、12日、28日）。副島は帰国後、清国に駐在するはずの日本公使のポストに日本人ではなく、ロシア公使に代行を頼んだ。

### 3 副島種臣の謁見成功

#### 3.1 国権外交

副島の北京での「国権外交」について、毛利敏彦（2002）、曹雯（2008）はそれぞれ日本側、中国側の史料を引用し論じている<sup>20)</sup>。簡単にまとめれば、副島は中国の古典を引用し、日中関係は「朋友之交」だといい<sup>21)</sup>、今まで清国側と他の外国使節の論議した結果、五鞠躬ごきつきゅうに対し、副島は三揖さんゆうで済ませると強い態度を表した。さらに、自分の身分は頭等欽差とうきんさ（特命全権大使）であるから「頭班」（第一グループ）で謁見すべきだと要求した。先述したとおり、副島は清国に赴く前に国際法を調べ、下準備をしていた。さらに、北京に到着した後、積極的に中国の古典を根拠として、自分の意見を主張し続けた。国際法が当時の清国で通用していないことが窺われよう。それに対し、副島が中国の古典を自分の行動の根拠にしたことは彼の外交手腕が柔軟性に富んでいることを物語っている。

結局、1873年6月29日（同治12年6月5日）、副島大使の主張したとおりに謁見が行われた。同日、ロシア、イギリス、アメリカ、フランス、オランダの公使も第二グループで五鞠躬の礼で皇帝に謁見した。副島は列国公使より北京来着が遅かったにもかかわらず、優先的に謁見を許され、列国公使の謁見の難題を副島は解決できた。

#### 3.2 李鴻章の行動

吉田宇之助は著書『李鴻章』の中で「『跪拝の礼』を廃して万国普通の礼に依るべく清廷の古例を打破したるは、実に彼れ（李鴻章）の力也、若し彼れにして傍観するあらば、副島大使如何に嚴厲げんれいの手段を執るも清廷をして斯く容易に廃止を実行せしむる能はざりしや知る可からざる也」と、「跪拝礼」の廃止における李鴻章の役割を語っている<sup>22)</sup>。ここでは、具体的に李の役割を見てみたい。

長年、洋務運動に携わった李鴻章は、北京にいる官僚たちより外国の事情に詳しかった。副島が皇帝に謁見しようとする意図を李に伝え、李はすぐさま総理衙門へ日本の実情を紹介した。

日本君臣には嘗て跪拝礼があったが、今年から西洋の冠服に変えて、この儀礼も追って廃止したと聞いた。国君に会ってももはや跪拝しないのである。彼が既に自ら進んで跪拝礼を捨て、西洋の儀礼に従った以上、再び彼らのやり方を棄て中国の跪拝礼を行うことはないだろう。<sup>23)</sup>

日本は必ずしも我々の言うとおりにしないと李は日本の状況を分析し、客観的に判断した。また、もし妥協できなければ「謁見をしなくてかまわない」という意見を表した。<sup>24)</sup>

さらに、前掲の史料では、一点見逃してはならない内容がある。つまり、李鴻章の謁見に対する「（副島を）他の使節より先にさせてはならない」という意見である。そして、前掲した4月24日に李鴻章から総理衙門へ送った文書にも、李の謁見に対する意見を窺うことができる。李の謁見に対する意見は、次の四点にまとめることができよう。

- ①謁見は一回しか認めない。
- ②一国単独の謁見は認めない。
- ③副島を他の使節より先にさせてはならない。
- ④交渉が不成立の場合、副島を謁見させずに帰らせる。

一方、副島が天津に滞在したとき、李鴻章は副島の謁見のために色々手配をし、孫士達を副島に紹介した。『大日本外交文書』は次のように述べている。

李ヨリきやうどう嚮導ノ委員ヲ派セント約シ、又江蘇記名道孫士達ナル者、現ニ総理衙門ニ在テ、外使謁謁ノ事ヲ議ス、閣下事アラハ、此人ヲ用フベシ、必ス能ク力ヲ致サン<sup>25)</sup>

以上の史料から見ると、李鴻章が副島の謁見に対し、予め支援をしたことがあきらかである。さらに、「日清修好条規」が締結されたばかりの時点において、李は副島の謁見を順調に済ませようと考えていたに違いない。これからの日清友好に対して、期待の一面もあったことは言うまでもない。

しかし、副島の北京での発言は李鴻章の予想を遙かに超えていた。副島は、三跪九叩はもちろん、五鞠躬にも反対した。更に、今まで待っていた外国公使たちを超え、単独で、三揖の礼で謁見を済ませると強く主張した。予想外であった副島の態度に対し、李は次のように述べた。

副島は機敏な才をもつ上、勇猛な男である。八日、十日の二回の返書では、ついに敢えてこのように狂って吠え、眼中に人が無い行動をとった。これを読んで、私は殊に憤怒している。副島が天津にいた時、強迫の話は一言もなかったが、北京に到着した後、このような凶暴さを表明するとは思ひもしなかった。<sup>26)</sup>

これは李鴻章から孫士達へ宛てた書翰である。この史料から、副島の行動に対する李鴻章の尋常ではない怒りを読み取ることができる。李は清国の官僚として、一切の行動は清国政府の立場に立たなければならない。「天朝上国」の利益や名誉を損なう行為に対し、無論反対である。謁見の儀礼に対する態度から、この点が明らかに分かるだろう。その上、外交問題を処理するとき、当時の総理衙門は力が強

かったため、李は総理衙門、世論などの要素を配慮し、慎重に自分の立場に合わせる行動を取らなければならない。

謁見に関する交渉がうまくまとまらず、副島は帰国を決心した。これはまさに李鴻章の予想した、「うまく交渉ができなければ、副島を謁見させずに帰国させる」という内容と同じである。不満を漏らした副島をこのまま帰国させるのか、それとも、一步を譲って、副島の要求どおりに謁見させるのか。この局面の打開を図ったのは孫士達であった。孫は次のように副島に李鴻章が配慮していることを述べた。

李中堂貴国ヲ敬重シテ、交誼ヲ厚クセント望ミ、深ク委ネラルル所有ルニ由レリ、閣下前月以來総理大臣ト謁事ヲ議スル毎トニ、士達必ス消息ヲ李府ニ通シ、而シテ李中堂ハ窃カニ閣下ノ為メニ封事上疏スル、已ニ再三及ヘリ<sup>27)</sup>

史料から明らかなように、孫は副島の帰国の意向を止めようとした。その理由として取り上げたのが、李鴻章の副島に対する支援の意向であった。その後、副島は謁見に成功して帰国する途中、天津に寄ったが、李鴻章に次のように感謝した。「種臣幸ニ万歳ヲ拝シ、我皇ノ国書ヲ面呈シ、其復書ヲ奉シテ来ル、皆中堂之力也」<sup>28)</sup>。この史料を読めば、謁見の成功は李鴻章の援助と深く関連があるように思われる。李は「日清修好条規」の批准書が交換されたばかりの時点で、謁見問題で日中両国に不愉快な結果をもたらすことは望まなかった。李が日本との関係を重視し、現実的解決を求めている。具体的に、李が表に出たのではなく、側面で援助をしていたと思われる。

### 3.3 その他の原因

謁見問題を処理するとき、清国は列国に対し、ある程度強い態度を示したが、日本にだけは何回も譲歩した。先述した要素のほかには以下のいくつかの理由が考えられよう。

第一に、「日清修好条規」の存在である。この条規は近代に入ってから、日中両国の間に締結したはじめての対等条約である。前掲した 1873 年 1 月 17 日の李による総理衙門への書翰では、李は副島の謁見に対し「条規で議したとおり、阻止するわけにはいかない」と表明した。つまり、条文のとおり日本の使臣を謁見させるべきである、と主張した。李鴻章を代表とする清国官員たちは、四苦八苦の交渉を経て、ついに批准書交換まで辿り着いた。李は今後の両国関係に希望を持っていたに違いない。条規が発効されたばかりの時点で、条文を守らない行動は無論とりたくはなかったものと思われる。

第二に、清国側は日本側に「争いの口実」を提供したくはなかった。自らの主張が入れられなかった副島は、6 月 20 日に帰国の決定をした。副島が面倒を起こさず帰国したならば、それは清国政府にとって、まさに望んだ通りのことである。しかし、現状は遥かに李鴻章の予想を超えていた。6 月 21 日 (5 月 27 日)、副島は柳原、鄭永寧を遣わし、憤懣を表明し、朝鮮帰属問題、澳門帰属問題、琉球難民殺害事件について総理衙門に問い合わせをした。この外交行動は、清国政府にとって予想外の出来事だった。謁見の交渉に挫折した日本側はなぜ突然、以上の事を照会してきたのか。6 月 21 日の夜、孫士達は鄭永寧に日本の意図について打診した。孫は総理衙門の推測を次のように述べた。

日本使節此論ヲ起ハ、謁見ノ議成熟セサルニ由レルカ、若シ其意ニ満ルホドノ議ヲ成シ、遂ニ謁見ヲ為サシメハ、生蕃問罪ノ説或ハ寢ヌヘシ<sup>29)</sup>

つまり、副島が謁見問題において十分な扱いをされなかったため、「生蕃問罪」(琉球難民殺害事件と小田県漂流民事件がその原因となる)という難癖をつけようとしていると、総理衙門は一方的に推測している、と孫は述べた。李鴻章は同僚への書翰の中で「日本が台湾へ罪を問いに行くといい、口調は傲慢で、脅迫の意味がある」と書いた<sup>30)</sup>。つまり、

清国側は 6 月 21 日に日本側から打診された内容を気にかけていた。

第三に、清国政府は、日本側が自国の味方でいてほしいと考えた。アヘン戦争以降、列強が清国で争いをしたとき、日本は自国の問題に悩まされ、欧米列強の列に入らなかった。故に、総理衙門は日本を対等に取り扱わず、最初の段階で中国の儀礼を日本に要求した。一方、副島は他の使節と頻繁な交流を保っていたことが明らかである。日本側と列強との親密な交際に対し、清国政府は警戒したはずである。1871 年、ロシアは伊犁を兵力で攻め取り、清国政府は何回も交渉したが、無効であった。属国のベトナムもフランスに侵入されている。この状況に当たって、まさに日本を自分の「外援」にさせるべきで、敵にすべきではなかった。

第四に、孫士達の役割も看過できない。孫は北京で官職についている人物ではなく、謁見問題の決裁者でもない。にもかかわらず、重要な役割を果たしていた。彼は副島が帰国しようとする局面を押しとどめ、謁見交渉の情報を李鴻章に報告するなど積極的に協力した。李鴻章は、「執事(孫士達)の心血を注いだ計画、考案がなければ、謁見問題はうまく解決できない」<sup>31)</sup>と孫士達の努力を高く評価した。

第五に、副島の「特命全権大使」という身分も考慮に入れなければならない。当時、北京にいた謁見の諸外国使節は北京に駐在していた公使であった。副島だけは同治帝の親政を祝うため、国書を持ち、わざわざ清国に渡来したのであった。身分も他の公使より高く、全権大使であった<sup>32)</sup>。

結局、清国政府は副島の単独、かつ第一グループでの謁見を認めた。しかし、「天朝上国」という優越感を抱いていた清国政府は、ほかの方法によって、この体面を挽回しようとした。それが、謁見に選んだ場所であった。中南海の紫光閣は、昔から朝貢国の使臣に面会する場所である。清政府はわざわざこの場所を選んで謁見した。これは列国を自分の属国だと仮想したのであろう。ある意味では面子が潰れないように対策を取ったのである。

## 終わりに

本稿は1873年副島外務卿が清国に滞在したとき発生した謁見問題を中心に論じてきた。李鴻章は中国を日本のように近代化させたいと考え、副島の謁見問題を機会に外国使節が謁見する場合、グローバルスタンダードに従った。今回の謁見問題は中国の歴史における位置づけについて、以下のようにまとめることができる。

まず、華夷（中国と外国）秩序が儀礼の面においても崩壊の兆候を現してきたことを指摘できる。アヘン戦争以後、列強の侵入により経済面では伝統的な経済体制が破壊され、政治面においても不平等条約の締結を余儀なくされ、一部の主権を喪失した。今回の謁見では、列強たちは清国の儀礼制度にも挑戦した。

次に、今回の謁見によって有識者の間にやっと危機感が生まれてきたという点である。例えば、徐桐（礼部右侍郎）は「徐侍郎奏陳安危大計各摺」を上奏し<sup>33)</sup>、朝廷では改革に対する活発な議論が展開され始めた。この上奏文の中で人材育成、練兵の重要性を強調し、さらに「平和は頼りにならない」という危機感も喚起した。この上奏文に対し、朝廷では賛成の声が多数出てきた。

さらに、日中関係への影響も見てみよう。実際、清国に赴く任務の一つとして、副島は「伐蕃ノ由ヲ以テシ、其経界ヲ正ウシテ半島ヲ開拓セン」と上奏している<sup>34)</sup>。残念ながら、李鴻章と清国政府はそれを知らなかった。副島は今回の清国派遣を利用し、台湾出兵の口実を得た。それは、まさに翌年に発生した台湾出兵のための布石であった。日清友好の裏には危機も潜んでいた。

## 注

- 1) 日清両国はともに欧米から押し付けられていた不平等条約の内容（領事裁判権、協定関税率）を相互に認め合った。
- 2) 例えば、石井孝（1982）『明治初期の日本と東アジア』（有隣堂）、毛利敏彦（1995）「副島種臣の対清外交」（『大阪市立大学法学雑誌』41(4)、大阪市立大学）、安養寺信俊（2005）「明治六年の対清交渉にみる『副島外交』の検討」（『岡山大学大学院文化科学研究科紀要』20、岡山大学大学院文化科学研究科）などが挙げられる。
- 3) 杜継東（1990）「外国人謁見清帝の礼儀之争」『歴史教学』1990年7期、秦国経（1992）「清代外国使臣謁見礼節」『故宮博物院院刊』1992年2期、宗成康（1992）「近代外国使節謁見清帝問題交渉述論」『歴史教学』1992年10期、汪林茂（2000）「中外関係史上重要突破和軼折—1873年外使向清帝面遞國書交涉事件簡論」『史學集刊』2000年3期、王開璽（1994）「從清代中外關係中的『礼儀之争』看中国半殖民地化的歷史軌跡」『北京師範大學學報』社会科学版、1994年2期、王開璽（2003）「同治朝謁見礼儀的解決及現實的思考」『中州學刊』2003年5期、李静（2005）「從跪拜到鞠躬—清代中外交往的礼儀冲突」『文史雜誌』2005年1期、李理・趙国輝（2007）「李仙得与日本第一次侵台」『近代史研究』2007年3期、曹雯（2008）「日本公使謁見同治帝与近代早期的中日交涉」『江蘇社会科学』2008年6期。
- 4) 丸山幹治（1936）『副島種臣伯』大日社、前掲毛利敏彦（1995）、Donald・キーン著、角地幸男訳（2007）『明治天皇』2 新潮文庫、森田朋子（2005）『開国と治外法権—領事裁判制度の運用とマリア・ルス号事件』吉川弘文館。また、マリア・ルス号事件とは、1872(明治5)年に横浜港に停泊中のペルー船マリア・ルス号を人身売買であることで裁判にかけ、清国人苦力（下層労働者）229人を解放した事件である。
- 5) 『乾隆英使謁見記』馬戛爾尼著、劉復訳、台湾学生書局、1973年、91頁。
- 6) 『中外関係史論叢』第3輯、中外関係史学会編、世界知識出版社、1991年、156頁。
- 7) 『籌弁夷務始末』（同治朝）89巻、3602頁。
- 8) 同上、3613-3614頁。
- 9) 同上、3618-3619頁。
- 10) 同上、3620頁。
- 11) 『籌弁夷務始末』（同治朝）90巻、3625頁。
- 12) 同上、3626頁。
- 13) 同上、3642頁。
- 14) 『大辞泉』下巻、小学館大辞泉編集部編、小学館、2012年、3678頁。
- 15) 『中日大辞典』第3版、愛知大学中日大辞典編集部編、



- 2010、915 頁。
- 16) 同上、647 頁。
- 17) 同上、1473 頁。
- 18) 史料番号 66。
- 19) マーティン (William Alexander Parsons Martin 1827-1916) アメリカ合衆国のプロテスタント中国宣教師。中国名丁韞良。1850 年から中国で伝道する傍ら清国政府の国際顧問をも担当し、中国外交の啓蒙に努め、欧米の近代学術を積極的に中国に紹介した。西学を紹介する著作が多数残されており、幕末明治期に日本に流入した。その内『万国公法』は幕末明治の外交界の指針となり、『天道溯原』は明治初年の代表的キリスト教書となった。その他、英文著書も多数。中国文化や中国の諸事情を広く欧米人に紹介した。
- 20) 毛利敏彦 (2002) 『明治維新政治外交史研究』吉川弘文館、前掲曹雯 (2008)。
- 21) 『大日本外交文書』第 6 巻、148 頁。
- 22) 吉田宇之助『李鴻章』民友社、1901 年、91 頁。
- 23) 『李鴻章全集』30 巻、514 頁。
- 24) 同上。
- 25) 『大日本外交文書』第 6 巻、139 頁、読点筆者。
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# 19世紀末中華世界における 調和のための多様性

——朝鮮の事例から——

This paper considers interaction between the Sino-centric world and Korea through the end of the 19th century. Sino-centric ideology and mechanisms remain in part, so it is important to consider this when looking at the future of East Asia.

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## 要旨

19世紀末の東アジア世界は、中国を中心とする伝統的な国際秩序である中華世界と近代国際法に基づく条約体制の二つの秩序が交錯していた。朝鮮はまさにそのなかに位置した。中華世界では、朝鮮が定められた儀式を遂行していれば、中国は朝鮮の内政・外交に干渉しなかった。

しかし国際環境の変化に伴い、中国は朝鮮を中華世界に止めようと朝鮮の内政・外交に干渉するようになり、朝米修好通商条約締結時（1883年）には、中国の意向で朝鮮は「中国属邦而内治外交向来自主」であると記した照会をアメリカ大統領に送った。中国はこの照会を「中国の属邦であり内治外交は自主」と「属邦」を強調して解釈し、朝鮮は「中国の属邦であるが内治外交は自主」と「自主」を強調して解釈した。アメリカはまた別の解釈をした。その後の中朝関係は、このような多様な解釈のなかで、ひとつの解釈を押しつけることなくある種の調和を保っていた。

本稿は中華世界と条約体制が交錯していた時期に、朝鮮が中国との関係を維持しつつ、いかに近代的な外交制度を整えていったのかについて検討するものである。朝鮮政府は1882年に中国との間に締結した中朝商民水陸貿易章程に基づいて、1883年に駐津大員を派遣し、1886年にそれを駐津督理に改称した。駐津督理への改称に際して、朝鮮政府は国際法を参照しながら駐津督理の職務規定の草稿である『駐津督理公署章程底稿』を作成した。そこで本稿はこの職務規定を取り上げ、そこからみえる朝鮮の近代的な外交制度の受容の一例を明らかにすることで、朝鮮政府が中華世界と条約体制の調和をどのように図ろうとしたのかを考えてみたい。

**キーワード** 朝鮮近代、宗属関係、近代的外交制度、駐津督理通商事務（駐津督理）、駐津督理公署章程底稿

## はじめに

本稿は、19世紀末の中華世界において、朝鮮政府が中華世界と条約体制の調和のためにとった政策を検討する目的で、1886年に天津に派遣された使節である駐津督理通商事務（以下、駐津督理）の職務規定の草稿『駐津督理公署章程底稿』（以下、『底稿』）<sup>1)</sup>を分析し、朝鮮政府の近代的な外交制度の受容の一例を明らかにしようとするものである。

19世紀末の東アジア世界は、中国を中心とする伝統的な国際秩序である中華世界と近代国際法に基づく条約体制の二つの秩序が交錯しており、朝鮮はまさにそのなかに位置した。中華世界では、朝鮮が定められた儀式を遂行すれば、中国は朝鮮の内政・外交に干渉せず、ある程度の多様性が認められていた。しかし国際環境の変化に伴い、中国は朝鮮の内政・外交に干渉するようになり、1883年の朝米修好通商条約締結時には、中国の意向で朝鮮は「中国

属邦而内治外交向来自主」であると記した照会をアメリカ大統領に送った。さらに、同年には中朝商民水陸貿易章程（以下、水陸章程）を締結して宗属関係を明文化した。これ以後、朝鮮は国際法に基づく日本・西欧諸国との関係と、「属国自主」と明文化された中国との関係の二つの関係のなかで対外政策を展開することとなった。

駐津督理はそのようななかで宗主国・中国の天津に派遣された使節である。駐津督理は、水陸章程第一条の「北洋大臣は自国商民の保護のため朝鮮の開港地に商務委員を派遣して駐在させ、該員は朝鮮の官員と平行礼をとる。（中略）朝鮮国王も天津に大員を派遣し駐在させるとともに、中国の開港地に他員を派遣し商務委員を務める。該員も中国の道府州県などの地方官と平行礼をとる」という規定に基づいて派遣された「大員」を前身とする。この駐津大員は任地に常駐して特定の任務を遂行する近代的な公使や領事というよりも、案件ごとに派遣される既存の貢使や領選使の機能に近く、職務規定も領選使の職務規定である「領選使節目」（1881年作成）が援用された<sup>2)</sup>。しかし、朝鮮政府は1886年に駐津大員を駐津督理に改称し、職務規定も新たに作成した。それが『底稿』である。『底稿』の前文には「各国の通例」を「酌擬」して作成したとあり、本文にも西欧各国が派遣する領事の職務を意識した項目がみられる。ゆえに本稿は、国際関係における朝鮮の位置に留意しながら、『底稿』の分析を通して朝鮮における宗属関係と近代的外交制度の関わり方を検討する。

## 1 『駐津督理公署章程底稿』（『底稿』）の分析

### 1.1 先行研究

『底稿』は、韓哲昊と権赫秀がそれぞれ駐津大員・駐津督理を扱った研究のなかで初めて使用した史料

で、両研究は『底稿』の韓国語訳を作成して詳細に紹介している<sup>3)</sup>。ただ両者は、朝鮮政府における近代的外交制度への移行という観点から駐津大員・駐津督理を捉えたため、宗属関係と条約関係が交錯するなかで朝鮮政府が宗主国・中国に派遣した使節であるという特性を十分に示さなかった。とりわけ権赫秀は、駐津大員・駐津督理が派遣された1883年から1894年を宗属関係から条約関係に移行する「過渡期」と捉え、宗属関係が反映された事象を限界とみた。今日の視点から歴史をみれば、そのようにいえるかもしれないが、当時の文脈のなかで理解しようとするれば、二つの関係は「交錯期」にあり、どちらかの事象を限界とみることはできないのではないだろうか。本稿はこのような観点から、駐津督理が持つ「伝統性」と近代性の混在の実態をありのままに明らかにしたい。

分析に入る前に、『底稿』を扱う上で注意しなければならない点がある。それは『底稿』があくまでも「底稿」すなわち草稿に過ぎないという点と、作成した機関<sup>4)</sup>と日時<sup>5)</sup>が明らかでないという点である。そのため『底稿』は一次史料とするには不明な部分が少なくなく、駐津督理の性格を論じる上では二次史料に止まる。しかしながら、前身の駐津大員の職務規定には、留学生の学習態度や日常生活の規律・罰則を記した「領選使節目」を援用したのに対して、駐津督理には「駐津督理公署章程」を新たに作成しようとしたことは大きな変化である。このような点に限れば、『底稿』は朝鮮政府の近代的外交制度受容の一過程を検討する上で有益な史料といえる。

### 1.2 『底稿』の内容

『底稿』をみると、まず前文の冒頭に「本署は本国出使常駐の始まり<sup>6)</sup>」とあり、駐津公館が最初の常駐使節とみなされている。韓哲昊が駐津大員・駐津督理を「我が国初の常駐外交使節団」と、権赫秀が「事実上、近代韓国最初の海外常駐外交交通商代表公館」というのは、この部分に依拠している<sup>7)</sup>。確か

に、駐津督理が創設された時期は、初代駐日辦理大臣（1886 年）や初代駐米全權大臣（1887 年）の任命・派遣が続く時期であり、国内では対外関係の繁忙によって統理交渉通商事務衙門（以下、外衙門）が対外事務に限定した職務規定『統理交渉通商事務衙門統章程』を制定する時期（1887 年）<sup>8)</sup>である。別言すれば、朝鮮政府が対外政策に近代的要素を取り入れはじめた時期といえる。しかし、これらの変化が宗属関係を有するなかでおこなわれたことを看過してはならない。この「出使常駐」を近代的外交制度にのみ引きつけて解釈するのではなく、宗属関係といかに整合性を保ったかという点にも留意して『底稿』を分析することで、条約関係と宗属関係が交錯するなかで朝鮮政府がどのように近代的な外交制度を取り入れていったのか、その実態に迫ることができる。

『底稿』では、次のように駐津督理を位置づけている。

水陸章程には、朝鮮が大員を派遣し天津に駐在させ、並びに他員を中国の開港場に分派して商務委員に充て、難しい事件が起これば、駐津大員が南北洋大臣に詳請するとある。また章程には、該員は道・府・州・県などの地方官と平行礼をとるとある。朝鮮の天津に駐在する委員の派遣は、各国に領事があるのと名目は異なるが体制は同じである<sup>9)</sup>。

ここからまず、駐津督理をあくまでも水陸章程に位置づけていることがわかる。一方で、水陸章程が創設した駐津大員は、難しい事件が発生した時に「南北洋大臣に詳請する」立場にあり、中国の「地方官と平行礼をとる」地位にあるので、機能は各国の領事と同じであるという。つまり、宗属関係に基づいて結ばれた水陸章程に条約関係の観点から解釈を加えて、駐津大員は領事と同じであるとして駐津督理に改称している。ただこの時、駐津大員を駐津領事ではなく駐津督理に改称したのは中国との関係

を意識したためであろう。

前文の後、『底稿』では 14 項目が列挙されている。具体的な内容は、①駐津督理の位置づけと国内機関との往来文書の形式規定、②駐津督理と従事官の職務規定、③書記官と翻訳官の職務規定、④駐津督理・従事官の従事員および駐津公館の雇用人に関する規定、⑤督理就任時の他国への就任報告に関する規定、⑥朝鮮が北洋大臣や礼部および総理衙門に公文を送る時の規定、⑦中国に入境する朝鮮人への許可証の発給と天津を経由して北京に入る齎奏官・齎咨官への路引（旅行券）発給および伴送派遣の規定、⑧朔望日の国旗掲揚規定、⑨駐津公館の朝鮮国内とのやりとりは仁川監理署をとし費用は駐津公館が負担する規定、⑩督理をはじめ駐津公館職員の月給規定、⑪駐津公館の経費は総理大臣が随時審査して監税官が送金する規定、⑫三年一任の任期規定、⑬アヘン吸引時の罰則規定、⑭年末に総理大臣に報告書を提出する規定である。この後、「この章程を総理大臣が国王に上奏し、裁可を受けた。その他未詳事項は随時処理すること<sup>10)</sup>」という文がって終わる。

### 1.3 『星軺指掌』の影響

以上の内容で注目される点は、『底稿』の作成者および駐津公館の最高責任者が「総理大臣」になっていることである。総理大臣とは宮闕（宮殿）内に置かれて国王の強い影響下にあった内務府の最高職位である。駐津公館の人事決定過程をみると、駐津大員は内務府が啓言して国王が任命し、駐津督理は外衙門か内務府が啓言して国王が任命した。ゆえに、人事の最終決定権を持っていたのは国王であり、国王が最高責任者にならなかったことは注目に値する。仮に国王ではなく事務方に任せるとしても、対外事務を管掌した外衙門の最高職位である督辦ではなく、国内機務や宮内事務を管掌する内務府の最高職位である総理大臣が最高責任者になったことは重要である。

このような問題意識から「総理大臣」という肩書



に着目すると、公使や領事派遣において総理大臣の役割を強調する『星輶指掌』の存在が浮かび上がってくる。

『星輶指掌』<sup>11)</sup>は、ドイツの外交官マルテンス (Charles de Martens, 馬爾頓) が公使や領事の説明を中心に外交官向けに近代の外交制度について詳述した書物『外交指針、外交官と領事官の権利と任務の概要』(1832年)を、1876年に清朝でマーティン (William A. Martin, 丁韪良) の指導のもと、聯芳と慶常が翻訳したものである<sup>12)</sup>。『星輶指掌』の朝鮮への伝来は、1877年12月に日本政府と朝鮮政府が日本公使の朝鮮駐京を議論していた際、花房代理公使が公使駐京を受け入れない朝鮮側に対して国際法上の見地より公使駐京の必要性を説くために『万国公法』とともに贈ったことによる<sup>13)</sup>。1877年当時、花房代理公使から『星輶指掌』を受け取ったのは礼曹判書趙寧夏であったが、その後礼曹をはじめとした朝鮮政府が『星輶指掌』をどのように受け入れたかを示す史料は管見<sup>かんけん</sup>の限り見つからない<sup>14)</sup>。当時の朝鮮政府は公使駐京に消極的な態度をとっていたことは勿論のこと、近代的な外交制度の構築そのものに積極的ではなかったため、『星輶指掌』にさほどの関心を示さなかったと考えられる。しかし、それから約10年の月日が経ち、既に派遣している駐津大員が領事と同じ機能を持つと意識しはじめた時、『星輶指掌』を参照して駐津大員を駐津督理として改編しようとした可能性がある。なぜなら、近代の公使・領事の役割や規則については『万国公法』よりも『星輶指掌』が詳述しているからである。

具体的には次のような内容が指摘できる。たとえば『星輶指掌』第1巻第1章第2節には、「論総理大臣之職」と総理大臣の職が取り上げられている。冒頭で「査総理大臣之職、有関国家安危利害、責任非輕」と総理大臣の職務を国家の安全と利害に関わるものでありその責任は軽くないと位置づけ、「凡外国交渉事務、皆頼総理大臣之才識」とあらゆる外交交渉事務は総理大臣の才識によるもので、「按常

例、本国領事駐劄外国者、均歸総理大臣管轄」と領事はみな総理大臣の管轄に帰すると記されている。さらに第3巻第12章第3節「論領事官分等」にも、「凡領事官、皆歸総理大臣管轄」と領事官はみな総理大臣の管轄に帰することが再度記されている。合わせて、「凡遣派委辦領事、須有本国総理大臣允准明文」とあり領事には総理大臣名の許可証が必要ともある。『万国公法』にはこのような領事に関する詳細な記述がないので、西欧各国が派遣する領事について調べる時には『星輶指掌』が適していたといえる。「はじめに」でも述べたとおり、『底稿』の前文には「各国通例酌擬」と各国の通例を斟酌したとあるので<sup>15)</sup>、その「各国通例」の一つに『星輶指掌』があり、『星輶指掌』に倣って『底稿』でも総理大臣の役割を強調した可能性が考えられる。

## 2 駐津督理の性格

### 2.1 西欧諸国の通例の受容

『底稿』の前文には、「署内で日々の公務をおこなうにあたり定章がないと、(中略)後継者は調べることが膨大になるので、各国の通例を酌擬して章程案を完成させた<sup>16)</sup>」とある。「領選使節目」を職務規定に援用した駐津大員と比べ、どのような「各国の通例」をどのように「酌擬」して『底稿』が作られたかを検討することは、朝鮮政府の近代的外交制度の受容をみるうえで有益である。本節では西欧諸国の通例の受容に着目して検討する。

一つ目は、②の「従事官は商務に隨時協力するだけでなく署内の司庫も兼ねて処理する。西欧の例に照らすと、副領事が司庫の事務を兼ね理めることがあり、従事官が督理の副に当たり、各国の副領事の体制と同じ<sup>17)</sup>」とする内容である。西欧諸国の副領事の例を参照して、従事官の「商務に隨時協力」し「署内の司庫も兼」ねる実態は、各国の副領事と同じだという。これは既にみた、駐津大員の機

能が領事と同じなので名前は異なるが体制（制度）は同じだとする論理と通じている。ただ、ここでも副領事と同じだといいつつも副領事に改称せず、従事官を用いたところに朝鮮における西欧諸国との違いがみられる。

二つ目は、⑧の「各国は皆、礼拝日に国旗を掲げるが、本署は朔望日に国旗を掲げる<sup>18)</sup>」という規定である。日曜日である礼拝日に国旗を掲揚する各国の例を「酌擬」して、駐津公館は「朔望日」、すなわち陰暦の毎月 1 日と 15 日に国旗を掲揚することを定めた。そもそも「朔望日」は、守令が闕牌を拝する儀式をおこなう日であった。これは、西欧諸国の儀式を朝鮮の慣習に合わせて運営する例とみなせよう。

最後は、⑫の「公使・領事の公例は皆、三年一任である。全ての本署各員は、要事および実の病により解任されて帰国する外は、重職を守るため理由なく帰国できない<sup>19)</sup>」という規定である。駐津大員・駐津督理任命者の多くは、自身や家族の病を理由に在外赴任を断ったり途中で帰国したりしており、赴任に消極的であった。これは恐らく、決められたルートで決められた儀式のみを遂行する既存の貢使などとは異なり、滞在期間が長く、それに伴い任地で予想外の問題に接する可能性があることを負担に感じたからと考えられる。このような風潮に対して朝鮮政府は、西欧各国の公使・領事の任期が三年であることを「公例」として導入し、在外使節の三年一任の制度を根付かせようとする意図が読み取れる。以上の規定から、朝鮮政府が西欧諸国の領事を意識して駐津督理に領事の要素を取り入れようとしたことが指摘できる。

## 2.2 宗属関係の反映

一方で『底稿』には、最後の駐津大員朴齊純がおこなっていた業務を明文化した項目もみられる。これらは「各国の通例」を「酌擬」したというよりは、宗属関係に基づく業務である。本節では、最後の駐津大員（1886 年 1 月 29 日～2 月 21 日）で

あり初代駐津督理（1886 年 2 月 21 日～1887 年 8 月 26 日）でもある朴齊純の職務日記『咨文（二）』（1886 年 6 月 7 日～1887 年 3 月 20 日）<sup>20)</sup>を用いて、最後の駐津大員の職務実態とも照らし合わせながらその具体的な内容を検討する。

まず、⑤の督理就任時の他国への就任報告に関する規定には、南北洋大臣には「申呈」で報告して直ちに「拝謁」し、牛莊・天津・烟台海関道には「照会」で報告して「拝会」し、駐津領事には「函」で報告して「拝会」するとある<sup>21)</sup>。すなわち、駐津督理は中国の官僚、とりわけ南北洋大臣に対する態度と、他国の領事に対する態度を明白に区別している。実際に、初代駐津督理朴齊純の就任時にはこの規定に従って就任報告がおこなわれた<sup>22)</sup>。

次に、⑥の「本国が北洋大臣に公文を咨送するときは、必ず本署が津海関道に函送してそれを代わりに送り届けてもらうように請う。北京の礼部および総理衙門に公文を咨送することがあれば本署官員が持っていくか、函で津海関道に、北洋大臣に代わりに送り届けてもらうよう取り次いでもらう<sup>23)</sup>」という、宗属関係を反映した文書往来の手続きに関する規定である。これらは、駐津大員が既におこなっていた業務であることが確認できる<sup>24)</sup>。すなわち、駐津大員がおこなっていた業務を後任者がいちいち調べなくてもよいようにという『底稿』の趣旨に従って明文化した項目といえる。

最後に⑦には、駐津督理が宗属関係に則って朝鮮側と中国側の仲介業務をおこなう規定が確認できる。

本国商民はこれまで勝手に中国内地に入り、随意に游歴し、新たな章程があることを知らなかった。今後は内地に入る者には、章程に照らして津海関道と連名署名し許可証を発給する。齎奏官・齎咨官が天津を経由して北京に赴くときは、章程に照らして津海関道に通知して北洋大臣に詳文を伝達し、路引を発給し伴送を派遣する。一般に、本国が別に派遣した人員は本署に來留し、本署が

住まいを提供し身の回りの世話などするほか、一切の費用は当該人員が自前で用意する<sup>25)</sup>。

引用の前半部分は、駐津大員朴斉純の在任中に朝鮮商人が中国で不法に貿易滞在したことがわかり、李鴻章が周馥<sup>しゅうふく</sup>をとおして、今後は章程に照らして中国に貿易滞在に来る朝鮮人は必ず駐津督理と津海関道が連名署名した執照（許可証）を受けるよう朴斉純に注意した内容を明文化したものである<sup>26)</sup>。中間部分の路引発給・伴送派遣も駐津大員朴斉純が実際におこなっていたことが確認でき<sup>27)</sup>、既におこなっていた業務を明文化したものである。後半部分も、職務記録から朴斉純と齋奏官が連絡をとりあっていたことが確認できるので、新しく設けた規定ではなく既におこなわれていた職務を明文化したものである。以上から、朝鮮政府は宗属関係の維持も重視しており、宗属典礼を円滑におこなうため、駐津督理に朝鮮側と中国側を仲介する役割も担わせたと指摘できる。

## おわりに

本稿は天津に派遣された駐津督理の職務規定である『底稿』の分析を通して、中華世界と条約体制が交錯していた時期に、朝鮮が中国との関係をいかに維持しつつ近代的外交制度を受容したのかについて検討した。その結果、明らかになった点は次の三点である。

第一に、『底稿』が『星輶指掌』<sup>せいよう ししやう</sup>を参照して作成された可能性が考えられることである。『底稿』には作成者および駐津公館の最高責任者は総理大臣であると記されている。この総理大臣の役割を強調する背景には、公使・領事の役割や規則について詳述した『星輶指掌』の存在があったと考えられる。

第二に、朝鮮政府が領事を意識して駐津大員から駐津督理に改称し、駐津督理に領事の要素を取り入れたことである。この際、駐津督理は領事と同じ体

制（制度）であるとしつつも、あくまでも水陸章程に位置づけて領事ではなく督理と改称したことは重要である。また、国旗掲揚規定や三年一任制度などを自国の慣習に合わせて適用しようとしたことも朝鮮の立場がうかがえる例である。すなわち、朝鮮政府は国際的な慣習を一律に導入するのではなく、自国の文化や状況、とりわけ中国との関係を勘案して受容したといえる。

第三に、朝鮮政府が駐津督理に宗属関係に基づく職務も担わせたことである。それらの職務は、「各国の通例」を「酌擬」したものではなく、最後の駐津大員朴斉純が既におこなっていた業務を明文化したものであった。ゆえに、朝鮮政府は宗属関係の維持も重視しており、駐津督理を領事としてだけでなく、宗属典礼を円滑におこなう使節としてもみなしていたことが指摘できる。

以上から、宗属関係と条約関係が交錯するなかにあった朝鮮は、近代的外交制度の導入に前向きに取り組みつつも、あくまでも中国との関係を優先させていたことがわかる。これは、朝鮮が中華世界の規律や文化と西欧諸国のそれとの調和を図ろうとした結果であるといえよう。

ただ、以上の事例が1886年におこなわれたことに留意しなければならない。朝鮮政府の対外政策を概観すると、既述したように1886年・1887年に近代的外交制度を取り入れた外衙門<sup>がい がもん</sup>の改編や日本や欧米への公使派遣をおこなっており、対外政策の近代的外交制度の一つの画期<sup>かんが</sup>をなしている。このような流れに鑑みると、近代的外交制度の受容を意識した『底稿』の作成は、その嚆矢<sup>こうし</sup>に位置づけられるため、当時においてはまだ既存の文化や宗属関係を優先させる考えが強く反映されていたのかもしれない。その後の近代的外交制度受容の実態については、別稿で論じたい。



## 注

- 1) 『駐津督理稿署章程底稿』、韓国ソウル大学校奎章閣韓國学図書館所蔵、奎 23564（以下、「奎」は奎章閣の蔵書番号を意味する）。なお本稿は、駐津督理の性格と活動実態について論じた拙稿「朝鮮政府の駐津督理通商事務の派遣（1886－1894）」（『朝鮮学報』第 231 輯、2014 年 4 月）でおこなった『底稿』の分析を、第二回アジア未来会議のテーマ「多様性と調和」に沿って加筆・修正したものである。
- 2) 拙稿「朝鮮政府の駐津大員の派遣（1883－1886）」『史学雑誌』第 122 編第 2 号、2013 年 2 月。
- 3) 韓哲昊「한국 근대 주진대원의 파견과 운영（1883－1894）」『東学研究』第 23 輯、2007 年 9 月、pp. 53-58。権赫秀「『兩載体制』와 19 세기 말 조선왕조의 대중국 외교：초대 天津駐節督理通商事務 南廷哲의 활동을 중심으로」『근대 한중관계사의 재조명』、ソウル、해안、2007 年、pp. 311-334。
- 4) 韓哲昊が内務府、権赫秀が外衙門であると指摘しているが、根拠となる史料は示していない（韓哲昊前掲論文 p. 53、権赫秀前掲書 p. 317）。
- 5) 韓哲昊は駐津督理への改称時とみて 1886 年とする（韓哲昊前掲論文 p. 53）。権赫秀は『底稿』前文の「署内日行公務並無定章、前有統理軍国事務衙門啓下事目、而諸多草摺、未具細章易致、後來各員漫無所稽」（『底稿』）を根拠に「多くの後任者が困難を経験してきたという内容に照らして、1880 年代後半」とする（権赫秀前掲書 p. 317）。
- 6) 「本署係本国出使常駐之始」『底稿』。
- 7) 韓哲昊前掲論文、p. 47。権赫秀前掲書、p. 317。
- 8) 1887 年の外衙門の改編については、拙稿「朝鮮近代の外交実務担当者に関する基礎的研究：『統理交涉通商事務衙門統章程』制定に着目して」『アジア地域文化研究』第 9 号、2013 年 3 月を参照。
- 9) 「查中国朝鮮貿易章程内開、朝鮮遣派大員駐節天津、並分派他員至中国已開口岸、充当商務委員、遇有疑難事件、由駐津大員、詳請北・南洋大臣等因、又章程内開該員与道府州県等地方官、往来均属平行相待等因、查朝鮮之派員駐津、猶各国之有領事、名目雖異体制相同」『底稿』。
- 10) 「以上章程、由總理大臣奏明啓下、俾藉遵守、一未盡事宜、隨時校実辦理」『底稿』。
- 11) 馬爾頓、聯芳・慶常共訳『星報指掌』北京、同文館、1876 年。もとの著作は Charles de Martens, Guide diplomatique ou précis des droits et des fonctions des agents diplomatiques et consulaires., Leipzig, F.A. Brockhaus., 1866。
- 12) 金容九『만국공법』、ソウル、소화、2008 年、p. 79。原田明利沙「19 世紀後半の中国における国際法をめぐる状況：ウィリアム・マーティンの書簡に基づく一考察」『東アジア近代史』第 16 号、2013 年 3 月、p. 226。
- 13) 田保橋潔『近代日鮮関係の研究』、上巻、朝鮮総督府中枢院、1940 年、p. 623。
- 14) 朝鮮における『星報指掌』の受容についての研究はほとんどない。金容九が『万国公法』の伝来を説明するなかで取り上げているが、ここではマーティンの翻訳方法に着目しており、『星報指掌』が朝鮮政府でどのように受け入れられたかについては言及していない（金容九、前掲書、pp. 79-82）。
- 15) 「署内日行公務並無定章、前有統理軍国事務衙門啓下事目、而諸多草摺、未具細章易致、後來各員漫無所稽、茲將經辦成案、參以各国通例酌擬」『底稿』。
- 16) 前注参照。かつて定めた事目とは「領選使節目」と「天津朝鮮商務公署章程」ではないかと推測される。「天津朝鮮商務公署章程」は確認できないが、1884 年 3 月 7 日仁川口華商地界章程第九条で章程の名前だけ引用されている（韓哲昊前掲論文、p. 53）。
- 17) 「從事官除所有商務隨時襄辦外、兼理署内司庫等事。查西例、実任副領事有兼理司庫之事、從事官居督理之副、与各国副領事体制相同」『底稿』。
- 18) 「各国皆以礼拜日懸掛国旗、而本署以朔望日懸掛国旗」『底稿』。
- 19) 「公例公使領事皆以三年一任、所有本署各員、除有要事及実病解任回国外、不得無端暇睨、以重職守」『底稿』。
- 20) 『咨文（二）』、奎經古 327.51、J249、1885/1886。
- 21) 「督理始到、即将新旧任交欽、接印日期、各具申呈北・南洋大臣、照会牛莊・天津・烟台海關道、又訂期拜謁北洋大臣、並拜会津海關道及地方司道府県各官、所有本国立約之各国駐津領事处、亦函告到任之由隨即拜会」『底稿』。
- 22) 1886 年 3 月 4 日朴齊純から周馥宛て照会、5 日周馥から各国領事宛て函、7 日朴齊純から奉天山海關道・山東東海關道方宛て照会、日付なし朴齊純から北洋大臣・南洋大臣宛て申報（『咨文（二）』）。
- 23) 「本国咨送北洋大臣公文、必須由本署函送關道請其代投、遇有咨送北京礼部及總理衙門公文、由本署員帶來亦函請關道轉詳北洋大臣代投」『底稿』。
- 24) 1885 年 6 月 17 日朴齊純から周馥宛て函、8 月 16 日朴齊純から周馥宛て函、8 月 17 日朴齊純から周馥宛て函（『咨文（二）』）。
- 25) 「本国商民從前私入中国内地、隨時自行游歷、並不知有新章、以後如有入内地者、照章与海關道會銜給照、至齋奏・咨官由津赴北京、照章知會關道轉詳北洋大臣、給發路引、派員伴送、凡由本国別派之員、來留本署、除住房伺候等事自本署代辦外、一切供億之費、均歸該員自備」『底稿』。
- 26) 1886 年 8 月 12 日周馥から朴齊純宛て照会（『咨文（二）』）。
- 27) 1886 年 9 月 6 日朴齊純から周馥宛て函、23 日朴齊純から周馥宛て函（『咨文（二）』）。



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『咨文（二）』、韓国ソウル大学校奎章閣韓国学図書館所蔵、奎経古 327.51、J249、1885/1886。

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# The 2nd Asia Future Conference Report

## 第2回アジア未来会議報告

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The Second Asia Future Conference was held from Friday, August 22nd, to Sunday, August 24th, in Bali, Indonesia, with 380 registered participants from 17 countries. The general theme of the conference was “Diversity and Harmony”, under which there were forums in the natural sciences, social sciences and humanities, and a large number of research paper presentations, promoting international and interdisciplinary discussions.

The Asia Future Conference aims to provide a platform for those who have studied in Japan and those who are interested in Japan to meet and discuss the future of Asia.

### Opening

On Friday, August 22nd, the function room in front of the plenary room at the Inna Grand Bali Beach Hotel in Sanur, Bali, was colorfully decorated with 70 pieces of batik (Indonesian traditional textiles) from the collections of Professor Masakazu Tozu (Professor Emeritus, Kokushikan University), 20 pieces of Japanese “sometsume” ceramics by Professor Fumio Shimada (Tokyo University of Art) and other young artists, as well as a barong (Indonesian lion dance) costume.

At 10:00, the Opening Ceremony commenced with the Balinese welcome dance performed by four female dancers. Mr. Yasushi Akashi, Conference Chairman, proclaimed the opening of the conference, which was followed by the welcome speech by the Vice-Governor of Bali and congratulatory speech by the Ambassador of Japan to Indonesia, His Excellency Yoshinori Katori.

2014年8月22日（金）から8月24日（日）、インドネシアのバリ島にて、第2回アジア未来会議が、17か国から380名の登録参加者を得て開催されました。総合テーマは「多様性と調和」。このテーマのもと、自然科学、社会科学、人文科学各分野のフォーラムが開催され、また、多くの研究論文の発表が行われ、国際的かつ学際的な議論が繰り広げられました。

アジア未来会議は、日本留学経験者や日本に関心のある若手・中堅の研究者が一堂に会し、アジアの未来について語り合う場を提供することを目的としています。

### 開会

8月22日（金）、バリ島サヌールのイナ・グラン・バリ・ビーチホテルの大会議場の前室には、午後のフォーラムで講演する戸津正勝先生（国士舘大学名誉教授）のコレクションから70点のバティック（インドネシアの伝統的なロウケツ染）、島田文雄先生（東京藝術大学）他による20点の染付陶器、そしてバロン（バリ島獅子舞の獅子）が展示され、会場が彩られました。

午前10時、開会式は4人の女性ダンサーによる華やかなバリの歓迎の踊りで始まり、明石康大会長の開会宣言の後、バリ州副知事から歓迎の挨拶、鹿取克章在インドネシア日本大使から祝辞をいただきました。



Opening proclamation



Keynote speech



"Shi-shi mai" performance

## Keynote Speech

At 11:00, the keynote speech was given by His Excellency Bilahari Kausikan, Ambassador at Large of Singapore (Former Foreign Affairs Permanent Secretary of Singapore) on the theme "Diversity and Harmony: ASEAN and East Asia in the Era of Global Reconstruction". The speech started with the proclamation that "the world is undergoing a profound transition of power and ideas. The modern international system [that] was shaped by the West . . . is now drawing to a close. No one can predict the future and we do not know what will replace the western-dominated system." The speech was very well-received, and proved to be thought-provoking for the participants who came from mostly Asian countries.

After the keynote speech, "Shishi-mai" (Japanese lion dance) was performed by a group of performers from Soni village in Nara Prefecture, Japan. After this all the participants moved to the terrace adjoining the beach for lunch.

## Guest Speakers' Forums

At 14:00, three forums by invited speakers commenced.

**Social Science Forum:** "New Order of East Asia in the Era of China's Emergence"—Researchers from China, Japan, Taiwan, Korea, the Philippines, Vietnam, Thailand and Indonesia reported how their countries were influenced by China's emergence, which evoked lively discussions.

**Humanities:** "Artistic Interconnections in Contemporary Asia"—Through the comparison between Japanese "Shishi-mai" and Indonesian Barong dance, ceramic technologies in East Asia, as well as Indonesian batik, common culture in Asia

## 基調講演

引き続き、午前11時から、シンガポールのビラハリ・コーシカン無任所大使（元シンガポール外務次官）による「多様性と調和：グローバル構造変革期のASEANと東アジア」という基調講演がありました。「世界は大きな転換期を経験している。近代の国際システムは西欧によって形作られたが、この時代は終わろうとしている。誰にも未来は分からないし、何が西欧が支配したシステムに取って代わるのか分からない」と始まった講演は、ほとんどがアジアの国からの参加者にとって大変示唆に富むものでした。

## 招待フォーラム

基調講演の後、奈良県宇陀郡曾爾村から招待した獅子舞の小演目が披露されました。その後、参加者はビーチを見渡すテラスで昼食をとり、午後2時から、招待講師による3つのフォーラムが開催されました。

- 社会科学フォーラム「中国台頭時代の東アジアの新秩序」では、中国、日本、台湾、韓国、フィリピン、ベトナム、タイ、インドネシアの研究者が、中国の台頭がそれぞれの国にどのように影響を及ぼしているかを発表し、活発な議論を呼び起こしました。
- 人文科学フォーラム「アジアを繋ぐアート」では、日本の獅子舞とバリ島のバロンダンス、日本と中国を中心とした東アジアの陶磁器の技術、そしてインドネシアの服飾（パティック）を題材に、アジアに共通する基層文化と、その現代的意義を考察しました。





Speeches on "Artistic Interconnections in Contemporary Asia"

and its contemporary meanings were discussed.

Natural Science Forum: "Environmental Remote Sensing"—As the Second SOMIRES (Symposium on Microsatellite for Remote Sensing) was held at the same time, researchers from USA, Indonesia, Malaysia, Taiwan, Korea and Japan reported their findings.

## Welcome Party

At 18:00, the Welcome Party commenced in the hotel garden facing the beach. After dinner came the main event of the day—a side-by-side performance of the Japanese "Shishi-mai" and Balinese Barong dance—performed in front of and mesmerizing the over 400 participants.

## Parallel Sessions

On Saturday, August 23, all the participants went to Udayana University, where 178 papers were presented in 41 panel sessions. As the Asia Future Conference is aspiring towards an international and interdisciplinary approach, each session was arranged by sub-themes, which the presenters selected during the submission process. As such, each session did not necessarily consist of specialists in a specific academic field. Although different from academic conference in specific fields, this approach helped foster many rich and diverse discussions.

## Awards

The Best Presentation for each panel was chosen by two chairpersons in each of the 41 sessions. Three Best Posters were selected by the AFC Academic Committee from the 11 posters that were displayed in the Conference. In addition, the Best Papers were

- 自然科学フォーラム「環境リモートセンシング」は、第2回リモートセンシング用マイクロ衛星学会 (SOMIRES 20) と同時開催で、アメリカ、インドネシア、マレーシア、台湾、韓国、日本からの研究者による報告が行われました。

## ウェルカムパーティー

午後6時からビーチに続くホテルの庭で開催された歓迎パーティーでは、夕食の後、今回の目玉イベントである日本の獅子舞とバリ島のバリダンスの画期的な競演が実現し、400名の参加者を魅了しました。

## 分科会

8月23日(土)、参加者は全員、ウダヤナ大学に移動し、41の分科会セッションに分かれて178本の論文が発表されました。アジア未来会議は国際的かつ学際的なアプローチを目指しているので、各セッションは、発表者が投稿時に選んだサブテーマに基づいて調整され、必ずしも専門分野の集まりではありません。学会とは違った、多角的かつ活発な議論が展開されました。

## 優秀賞

各セッションでは、2名の座長の推薦により優秀発表賞が選ばれました。また、11本のポスターが掲示され、AFC学術委員会により3本の優秀ポスター賞が決定しました。さらに、アジア未来会議で



Welcome party where Japanese “Shi-shi-mai” and Balinese Barong dance were performed

chosen before the conference and the awards were presented during the Farewell Party on the last day of the conference. Seventy-one full papers that were submitted online by February 28th, 2014, were screened by 42 judges in total according to the following criteria: 1) Is the theme of this paper in accordance with the AFC theme “Diversity and Harmony”? 2) Is this paper persuasive? 3) Is this paper original? 4) Does this paper have an interdisciplinary and international approach? Each reviewer recommended two papers out of nine or ten papers. After compiling the results, the papers that were recommended by more than two reviewers were selected as one of the Best Papers.

## Special Sessions

The following three special sessions were also held in addition to the 41 panel sessions.

Round Table Discussion—“The Future of Japan Studies: Toward a Dream of an Academic Community of East Asia”: Supported by a grant from the Tokyo Club, several researchers of Japan Studies, mainly from China, but also from Korea and Taiwan, were invited. They reported on the current situation of Japan Studies and discussed how to move forward.

CFHRS Seminar “Korea’s Precedent Role for Upgrading East Asia’s Regional Dynamism”—Organized by the Center for Future Human Resources Studies (Korea). There were two lectures followed by the research reports by the undergraduate students.

SGRA Cafe “Fukushima and its Aftermath: Lessons from a Man-Made Disaster”—Exhibition of photos and documentary film made by the participants of the SGRA Study Tour to Fukushima. A talk session was also held.

は投稿された各分野の学術論文の中から優秀論文を選考して表彰します。優秀論文の審査・選考は会議開催に先立って行われ、2014年2月28日までに投稿された71本のフルペーパーが、延べ42名の審査員によって審査されました。査読者は、(1)論文のテーマが会議のテーマ「多様性と調和」と合っているか、(2)論旨に説得力があるか、(3)従来の説の受け売りではなく、独自の新しいものがあるか、(4)学際的かつ国際的なアプローチがあるか、という基準に基づき、9～10本の査読論文から2本を推薦しました。集計の結果、2人以上の審査員から推薦を受けた18本を優秀論文と決定しました。

## 特別セッション

41分科会セッションと並行して、3つの特別セッションが開催されました。

- 円卓会議「これからの日本研究：東アジア学術共同体の夢に向かって」は、東京倶楽部の助成を受けて中国を中心に台湾や韓国の日本研究者を招待し、各国における日本研究の現状を確認した後、これから日本研究をどのように進めるべきかを検討しました。
- CFHRSセミナー「ダイナミックな東アジアの未来のための韓国の先導的役割」は、韓国未来人力研究院が主催し、講義と学部生による研究発表が行われました。
- SGRAカフェ「フクシマとその後：人災からの教訓」では、SGRAスタディツアーの参加者が撮影した写真展示及びドキュメンタリフィルムの上映と、談話セッションを行いました。



Round table discussion on Japan studies



178 papers were presented in a total of 41 sessions



## Farewell Party

After the sessions ended at 17:30, all the participants moved to the restaurant Hong Kong Garden by bus to participate in the Farewell Party. After a short report about the conference by the AFC Organizing Committee Chair Junko Imanishi, the Rector of Udayana University Dr. Ketut Suastika made a toast, which was followed by a Javanese dance by two Japanese performers and the presentation of awards. At the presentation ceremony, the 18 authors of the Best Papers went up to the stage and received their certificates from Mr. Yasushi Akashi, Conference Chairman. The certificates for the 41 Best Presentations and 3 Best Posters were given out by Mrs. Itsuko Atsumi, Executive Director of Atsumi International Foundation. Lastly, Dr. Saeko Urushibara, Vice Chairman of the University of Kitakyushu, announced that the Third Asia Future Conference would be held in Kitakyushu in 2016.

## Study Tours

On Sunday, August 24th, participants took part in organized excursions, which included visiting the rice terrace at Jatilwih which is a World Cultural Heritage site, going to the Ubud area for sightseeing and shopping, or visiting the Uluwatu Temple to see the kecak dance and enjoying a seafood dinner.

## Administrations

The Second Asia Future Conference “Diversity and Harmony” was hosted by the Atsumi International Foundation (Sekiguchi Global Research Association (SGRA)), co-hosted by Udayana University (Postgraduate Program); supported by the Ministry of Education, Culture, Sports, Science and Technology, the Embassy of Japan in Indonesia, and the Economic Research

## フェアウェルパーティー

午後5時半にセッションが終了すると、参加者は全員バスでレストラン「香港ガーデン」に移動し、フェアウェルパーティーが開催されました。今西淳子 AFC 実行委員長の会議報告のあと、ケトゥ・スアスティカ ウダヤナ大学長による乾杯、2名の日本人舞踏家によるジャワのダンス、優秀賞の授賞式が行われました。授賞式では、優秀論文の著者18名が壇上に上がり、明石康大会委員長から賞状が授与されました。優秀発表賞41名と、優秀ポスター賞3名には、渥美伊都子渥美財団理事長が賞状を授与しました。最後に、北九州市立大学の漆原朗子副学長より、第3回アジア未来会議の発表がありました。

## 視察

8月24日(日)参加者は、それぞれ、世界文化遺産ジャティルイの棚田観光、ウブドでの観光と買い物、ウルワツ寺院でのケチャックダンスとシーフードディナー、などを楽しみました。

## 運営組織

第2回アジア未来会議「多様性と調和」は、渥美国際交流財団（関口グローバル研究会（SGRA））主催、ウダヤナ大学（大学院プログラム）共催で、文部科学省、在インドネシア日本大使館、東アジア ASEAN 経済研究センター（ERIA）の後援、韓国未来人力研究院、世界平和研究所、JAFSA、





Farewell party where Best Paper prizes were awarded



Institute for ASEAN and East Asia (ERIA); in cooperation with the Center for Future Human Resources, JAFSA, and Global Voices from Japan; grants from the Japan Foundation Asia Center, Toshiba International Foundation, and Tokyo Club; sponsored by Garuda Indonesia, Tokyo Marine Indonesia, Airmas Asri, Hermitage, Taiyo Sinar, Mitsubishi Corporation Indonesia, Daiwa Securities, Chugai Pharmaceutical, Kokuyo, Ito-en and Kajima. In particular, we owe great thanks to generous support from Kajima's local subsidiaries, which helped make the conference a festive event.

The Organizing Committee and Academic Committee for this conference were organized by former Atsumi scholars (known as "Raccoons"), and together with the SGRA Steering Committee members, they voluntarily took part in almost all aspects of the holding of the conference, from planning the forums, maintaining the home-pages, selecting the best awards, to taking charge of the reception. In addition, 82 people in total including invited guest speakers kindly agreed to act as the chairs of the panel sessions.

We would like to express our heartfelt thanks to the more than 400 participants, as well as to those who supported the holding of the conference and all of the volunteers who provided support in many ways and helped lead to the success of the Second Asia Future Conference.

The Asia Future Conference started in 2013 and we aim to host it five times within a span of ten years. The 3rd Asia Future Conference will be held in Kitakyushu, Japan, from September 29th to October 3rd, 2016.

We would like to ask for your continued support, cooperation and, most of all, your participation.

Global Voices from Japan の協力、国際交流基金アジアセンター、東芝国際交流財団、東京倶楽部からの助成、ガルダ・インドネシア航空、東京海上インドネシア、インドネシア三菱商事、Airmas Asri、Hermitage、Taiyo Sinar、ISS、Securindo Packatama、大和証券、中外製薬、コクヨ、伊藤園、鹿島建設からの協賛をいただきました。とりわけ、鹿島現地法人のみなさんからは全面的なサポートをいただき、華やかな会議にすることができました。

運営にあたっては、元渥美奨学生を中心に実行委員会、学術委員会が組織され、SGRA 運営委員も加わって、フォーラムの企画から、ホームページの維持管理、優秀賞の選考、当日の受付まであらゆる業務をお手伝いいただきました。また、招待講師を含む延べ 82 名の方に多様に富んだセッションの座長をご快諾いただきました。

#### おわりに

400 名を超える参加者のみなさん、開催のためにご支援くださったみなさん、さまざまな面でボランティアでご協力くださったみなさんのおかげで、第2回アジア未来会議を成功裡に実施することができましたことを、心より感謝申し上げます。

アジア未来会議は 2013 年から始めた新しいプロジェクトで、10 年間で 5 回の開催をめざしています。第3回アジア未来会議は、2016 年 9 月 29 日から 10 月 3 日まで、北九州市で開催します。

皆様のご支援、ご協力、そして何よりもご参加をお待ちしています。





## Hearty Thanks to All

The 2nd Asia Future Conference was hosted by the Atsumi International Foundation, co-hosted with Udayana University, and was supported by many institutions, foundations and companies listed below. We would like to express my heartfelt gratitude to the more than 380 participants, to those who supported the holding of the conference, and to the volunteers who cooperated in many ways, for the success of the 2nd Asia Future Conference.

|                      |  |
|----------------------|--|
| <b>Host</b>          | Atsumi International Foundation<br>(Sekiguchi Global Research Association)   |
| <b>Co-host</b>       | Udayana University (Postgraduate Program)  |
| <b>Supporters</b>    | Ministry of Education, Culture, Sports, Science and Technology Japan<br>Embassy of Japan in Indonesia<br>Economic Research Institute for ASEAN and East Asia   |
| <b>Grants</b>        | Japan Foundation Asia Center<br>Tokyo Club<br>Toshiba International Foundation   |
| <b>Collaborators</b> | Center for Future Human Resource Studies (Korea)<br>Institute for International Policy Studies (IIPS)<br>Global Voices from Japan<br>Japan Network for International Education (JAFSA)   |
| <b>Sponsors</b>      | Garuda Indonesia<br>PT. Airmas Asri<br>The Hermitage<br>PT. Asuransi Tokio Marine Indonesia<br>PT. Taiyo Sinar Raya Teknik<br>PT. Mitsubishi Corporation Indonesia<br>Daiwa Securities Co., Ltd.<br>Chugai Pharmaceutical Co., Ltd.<br>Kokuyo Co., Ltd.<br>Ito En Inc.<br>PT. Securindo Packatama Indonesia<br>PT. ISS Indonesia<br>Kajima Co., Ltd. |

## ご協力、ありがとうございました

第2回アジア未来会議は、渥美国際交流財団主催、ウダヤナ大学共催で開催されましたが、下記のとおりたくさんの機関や企業からご支援をいただきました。また380名を超える参加者の皆様、開催のためにご支援くださった皆様、さまざまな面でボランティアでご協力くださった皆様のおかげで、第2回アジア未来会議を成功裡に実施することができましたことを、心より感謝申し上げます。

|           |  |
|-----------|--|
| <b>主催</b> | 公益財団法人渥美国際交流財団<br>(関口グローバル研究会)   |
| <b>共催</b> | ウダヤナ大学 (大学院プログラム)  |
| <b>後援</b> | 日本国文部科学省<br>在インドネシア日本大使館<br>東アジア・アセアン経済研究センター  |
| <b>助成</b> | 独立行政法人国際交流基金アジアセンター<br>一般社団法人東京倶楽部<br>公益財団法人東芝国際交流財団   |
| <b>協力</b> | 財団法人未来人力研究院 (韓国)<br>公益財団法人世界平和研究所<br>Global Voices from Japan<br>特定非営利活動法人 JAFSA (国際教育交流協議会)   |
| <b>協賛</b> | ガルーダ・インドネシア航空<br>エアマス・アスリ株式会社<br>エルミタージュ・ホテル<br>東京海上インドネシア株式会社<br>タイヨー・シナール・ラヤ・テクニク株式会社<br>インドネシア三菱商事株式会社<br>大和証券株式会社<br>中外製薬株式会社<br>コクヨ株式会社<br>株式会社伊藤園<br>セキュアー・パーキング株式会社<br>ISS インドネシア株式会社<br>鹿島建設株式会社 |

## アジア未来会議運営組織

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