

# Rewards for Environmental Services of ICCs In the Philippines



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フィリピン政府は先住民の伝統的居住区を保護しているが、根深い貧困の問題がある。そうした地区で環境保護活動に参加する住民に報酬を出す仕組みを活用し、貧困からの脱出と持続可能な農業の両立を目指す動きを検証した。

## Abstract

The Indigenous Cultural Communities in the Cordillera Region of the Philippines regarded the Indigenous Peoples Rights Act (IPRA) as answer to their plight for genuine development and self-determination over generations. The native tribes of Bakun in Benguet, Philippines was the first Indigenous Cultural Communities (ICCs) issued with Certificate of Ancestral Domain Title. The International Fund for Agricultural Development and the World Agroforestry Centre introduced the framework on “Rewarding the Upland Poor for the Environmental Services” (RUPES), and Bakun, Benguet is among the three project sites. The RUPES action research in Bakun was spearheaded by Cordillera Highland Agricultural Resource and Management Project (CHARMP) with the partner Indigenous People’s Organization named as Bakun Indigenous Tribes Organization (BITO), participated by stakeholders, i.e. MLGU, DENR, CHARMP-PSO, DAR and NGOs.

The project invested on community empowerment, through awareness and capacity building coupled by the introduction of RUPES principles, framework, and watershed profiling. The Community and the buyers of the environmental services and products created mutual beneficial relationship to each other, and mechanisms for sustainability were institutionalized. Foremost, as Bakun is a watershed that provided watershed environmental services, HEDCOR and Luzon Hydro Companies equally reframed and aligned their perspective to RUPES to benefit the BITO.

## Keywords

indigenous cultural communities, empowerment, rewards, environmental services, seller-buyer

## Background and Rationale

The World agroforestry Centre (ICRAF) embarked on a project in Asia to identify pro-poor mechanisms to reward upland communities so they may enhance their livelihood and promote sustainable resource use thereby reducing poverty and preserving the environment through the so called “REWARDING THE UPLAND POOR FOR ENVIRONMENTAL SERVICES THEY PROVIDE” (RUPES). The project was undertaken through the support of the International Fund for Agricultural Development (IFAD). The RUPES covered six countries namely: Indonesia, Vietnam, India, Nepal and the Philippines.

In the Philippines the RUPES project started out two action research sites in Luzon in 2002-2007, namely the Bakun in the Province of Benguet for the development of payments for watershed services (2004) and in Kalahan in Nueva Viscaya for carbon sequestration (2003). Other sites are in Sibuyan Island in Romblon; Baticulan in Negros Occidental and in Lantapan in Bukidnon (2006). In all sites, the project worked with community based organizations as the main stakeholders who are themselves the local resource managers and providers or sellers of the environmental service.

The Bakun RUPES was implemented with the Department of Agriculture – Cordillera Administrative

Region (DA-CAR) through its IFAD funded project -the Cordillera Highland Agricultural Resource Management Project (CHARMP) headed by Dr. Cameron Odsey, the PSO Manager. It was in collaboration with the Bakun

Indigenous Tribes Organization, the Bakun MLGU and all National line agencies and private institutions and enterprises and NGOs.

## Project Site Profile

VARIABLE	PROJECT AREA
Municipality, Province, Region	Baku, Benguet, Cordillera Administrative Region (Northern Luzon)
No. of Barangays	7 barangays : Ampusongan, Bagu, Bdalipey, Gambang, Kayapa, Poblacion, Sinacbat
Temperature	10-28 degree Celsius. December, January the coldest
Climate	Type I, rainy /wet May to October, dry from November - April,
Elevation	200- 2,500 MASL
Topography	rolling to very steep terrain (26-45 degrees slope)
Watershed name & area	Bakun Watershed; 19,321 hectares, 91% within Bakun Municipality
Size of watershed	21,129 has
Vegetation	native pine species and mossy forest
No. of Major Rivers	4 major rivers : Bakun River , Bagu River, Gambang river (part of Abra River)
Total Population	14,148 (2007)
Main Economic activities	Marginal rice and vegetable production (potatoes, cabbage, carrots, lettuces, root crops, legumes). Small scale mining
Environmental service (ES) provider	Kankanaey-Bago Tribe represented by the Bakun Indigenous Tribes Organization (BITO)
Tenurial Instruments	Certificate of Ancestral Domain Title issued July 22,2002 for 30,705, Free Patent, Certificate of Land Ownership Award (CLOA)
Investment in Environmental Service (ES)	Indigenous sustainable farming and resource management practices since time immorial
Form of Environmental service (ES)	Clean water supply for Household consumption, irrigation and hydropower
Environmental service user/buyer	2500 HH and farming families, 4 hydro plants of which 3 are mini hydro generating less the 500 MW capacity belonging to 2 companies - Luzon Hydro Power Company and HEDCOR c mini Hydro Power Company
Reward mechanism	Statutory payment (166,93 M PhP actual); Negotiated and voluntary benefits paid in cash and in kind (as of 2006)

The Technical working group (TWG) was organized, which the Department of Agrarian Reform was a member in the action research.



**Fig. 1. Location of the Municipality of Bakun**

## Objectives of the RUPES Action Research

The followings are the objectives of this research, to wit:

1. Understanding rewards for environment services (RES) and how RES can reduce poverty;
2. Identify the environmental services and means to measure them;
3. Determine who pays for the service, who receives the payment for the services and the amount and form of payments;
4. Explore innovative, sustainable models or approaches for successful transfer agreements appropriate and building partnerships and networking;
5. Develop or strengthen local institutions to handle environmental transfer payments and connecting ES providers and buyers in the testing RES schemes;
6. Identify problems, issues, needs and concerns and recommended actions and solutions; and
7. Establish collaborative networks at global, regional and national levels for RUPES work and creating policy & institutional options for enabled RES schemes at local, national, international levels

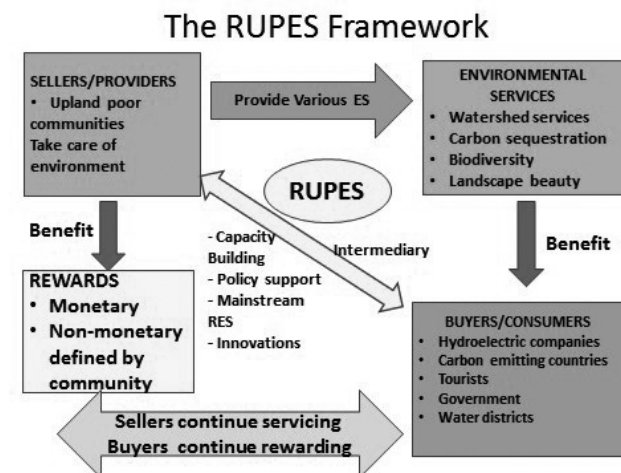


Fig. 2. Concept and Framework of RUPES

## Methodology

The RUPES was an action research was a hand holding, walk-through process which employed the following approaches namely: Community orientation through lecture discussion sessions, Barangay Workshop

consultations, focus group dialogues, surveys, demonstration, practicum, design workshops and experiential learning expeditions, technical trainings, write shops and learning sessions, review community planning workshops.

## Project Activities/Action Research Undertaken

1. On November 2004, Bakun was selected as RUPES action research site by the World Agroforestry Centre focusing on watershed services. It was implemented in collaboration with the International Fund for Agricultural Development (IFAD) funded Cordillera Highland Agricultural and Resource Management Program of the Department of Agriculture and the Bakun Indigenous Tribes Organization (BITO).
2. RUPES orientation meetings were held for the BITO *papangoan*, barangay and municipal officials, key community representatives, the Hydro-electric companies (HEC) which enhanced RUPES understanding.
3. Ethno Botanical Resource Survey of Bakun Ancestral Domain was undertaken and was registered with the NCIP-IPR - the first IPR registered in the Cordilleras. The Local Knowledge of plant resources of some 265 plant species were documented preserving the local heritage in a new, easy accessible format – Album. Local Knowledge on the relation between land cover and watershed functions was documented in comparison with the perceptions and government and hydrological models.
4. A study on Hydrologic function of the Bakun Watershed was also conducted which elevated the awareness of the community on the importance of trees with regards to watershed conservation. There were four mini hydro plants supported by the Bakun watershed. The Bakun AC Plant located at Alilem, Ilocos Sur is supported by the Bakun watershed producing 70 MW; the FLS Plant, Poblacion, Bakun produces 5.9 MW, 27 million KWH sold to National Power Corporation and Benguet Electric Cooperative; The Lon-oy Plant yields 3.6 MW, 12 Million KWH sold to NPC & BENECO; the Lower

Labay Plant = 2.4 MW , 14 Million KWH sold to NPC and BENECO. With the Bakun's rainfall pattern of very wet seasons alternating annually with clear dry seasons, water balance modeling predicts that in the wet season there is a dramatically high water yield.

5. In 2005, an assessment of all the benefits provided by the two HEC (Luzon Hydro Company and the HEDCOR Inc.) was done. Initial review and analysis of the benefits through workshops participated by the BITO, BLGU, MLGU and the HECs. Results showed that there were benefits that were statutory and voluntary and non-MOA.
6. A cross visit to Kalahan Forest Reserve to gain insights on community empowerment ancestral domain and natural resources were undertaken. The participants gained insights on how the Kalahan and the Kalahan Educational Foundation are optimizing benefits from their resources while preserving them.
7. The Current capacities of Bakun Stakeholders to implement and sustain RUPES activities were also assessed which was the basis of series of capacity building interventions undertaken.
8. In support, a Technical Advisory Group (TAG) composed of Heads/representatives from concerned line agencies of government and non-government organizations in CAR was formed, likewise the formation of a Technical Working Group (TWG) at the project level to ensure that activities and outputs were facilitated.
9. Training on water quality monitoring & management was one of the important skills identified by the stakeholders. Water quality monitoring was held where the BITO and selected BLGU, community, MLGU, TAG and TWG were taught basic methods of quality water monitoring, in terms of equipment used, quality indicators and parameters. Practical demonstration on water sample collection for laboratory examination, technique on estimating stream flow discharge, floatation method and were conducted at Bakun River.
10. As a result it was agreed that a Bakun Integrated Watershed Development & Management plan (BIWDMP) should be formulated as blue print for the watershed management. Bakun sees the importance of an integrated plan that can get real "buy in" from the hydro power company on the basis of realistic and conditional agreements. Representatives from the TAG and the TWG were tasked to prepare the plan with the community. Training to enhance RUPES/RES knowledge and on Natural resource Management, agroforestry farming systems were conducted to heighten appreciation and concepts for the team.
11. Participatory Poverty Livelihood Assessment (PALA) was conducted in 2007 which has yielded valuable insights on how the upland communities would be able to maximize their income opportunities. The communities acknowledged to enhance their farming practices to maintain evergreen agriculture on slopes such as, natural vegetative filter strips establishment, cash perennials integration and improved cropping pattern, vegetable agroforestry, livestock integration, organic fertilizer production
12. The BIWDMP was finalized with RUPES laying the groundwork for its formulation. Doable programs, interventions, assistance and innovations were mainstreamed in the plans of each stakeholder and implemented with the community.
13. In 2009, the RUPES participated in the planning workshop at Baguio City and contributed to the proposal for the CHARMP 2 mainstreaming in the Rewards for ecosystems service (RES) scheme for the CHARMP 2. The linkage between CHARMP and RUPES were revived to continue partnership in Bakun and the BITO, LGU and HEC continue cooperation.
14. A review and planning session was undertaken in 2010 to assess how far has RUPES gone, what needs to be done participated by stakeholders, TAG and TWG. An MOU was forged among the BITO, LGU, and CHARMP to undertake and continue the RUPES. Based on the BIWDMP, a proposal write shop was conducted to prepare critical project proposals for the HEC in Bakun to fund conservation and rehabilitation activities starting 2011 onwards. The RES/RUPES inspired project design was

appreciated hence is being advocated region-wide. The CHARMP 2 being implemented by the DA and the NREMP by the DENR are has RUPES component. The HEDCOR which now operates a new Hydro plant at Mountain Province has mainstreamed RES mechanism

## **Research Findings**

### ***Indigenous Knowledge Systems and Practices.***

The Kankana-ey Bago Tribes of Bakun have a rich socio-cultural heritage. Their indigenous way of life governs how they relate with land, forests, and among themselves. They have a wealth of Indigenous Knowledge systems and practices. They support each other through the *inal-luyon* system of mutual helps where assistance is reciprocated in kind. Conflict / disputes among members and with other tribes are settled through the traditional *tongtong* system which is basically through consensus. However on aspects of income, healthcare and education, the traditional way of life has already changed.

### ***Certificate of ancestral domain title (CADT)***

The Kankana-ey-Bago Tribe of Bakun has a history of articulating their rights within Philippine society adopting indigenous and sophisticated strategies to protect their way of life. They are the first ICC to obtain CADT that gave them formal title to their indigenous system of ownership. They received their CADT through the efforts of the BITO which gained the responsibility of representing the tribe.

### ***Ancestral Domain Management***

The tribe have demonstrated responsible stewardship of their natural resources through their indigenous farming practices. These practices include terracing, riprapping, sloping farm lands, *nem-a*, a system of clearing portions of forest to establish a permanent agroforestry, safeguards environmental functions on their lands. The Practice is so embedded in their lives that they have spiritual significance. Example, cutting down of trees cannot proceed without performing a ritual beforehand. With these practices in place, the Bakun

Watershed yields plentiful water supplies for domestic use, irrigation and for the two hydro power plants.

### ***Household Incomes***

Unfortunately, a net result of these sustainable land use practices is that, 87% of the households earn incomes below the poverty line. Upland farmers cannot meet their needs defined by modern standards. Presented with increasing demand for commercial farming, they cannot resist the lure of increasing incomes by clearing their agroforestry for temperate vegetables

### ***Environmental Services provided by the Bakun Ancestral Domain***

The environmental services provided are watershed service, carbon sequestration and landscape beauty for tourism. Carbon trading has yet to be explored. The Ethno Botanical resources survey is not sufficient to determine carbon stock. A resource valuation is needed to determine actual and potential carbon stock. Tourism is already being developed and operated by the MLGU under the municipal tourism unit. Responsible and IP sensitive Tourism Development Plan has yet to be crafted with the communities. Net benefit from tourism has yet to be determined. Bakun People articulated key tourism concerns namely: that it should be natural/ cultural area focused not to disturb indigenous systems and sacred grounds, build upon community Participation, emphasize Protection management of resources education & ethics, equitable distribution of local benefits, IP sensitive and responsive visitor management and responsible marketing. This is because Bakun Indigenous community is not yet ready for the globalization of tourism.

### ***Watershed Services: Water for Hydropower plant***

These environmental services have created value for hydropower companies that operate in the area. The Hydro companies and the tribe worked closely respecting its wishes in land use and assisting in some community development effort. The Hydro power plants utilizes run-off-river. It is a least disruptive to the environment. Scheme works by redirecting river water through the

weir into conveyance pipes towards the penstock and feeding it downhill to the power station. The pipeline brings water to a forebay tank where the water flow is slowed allowing sand and other particles to settle. Clear water passes through pressure pipe or penstock to the turbines. The Natural force of gravity generates energy used to spin the turbine enclosed in a powerhouse with the generator and control equipment. Spinning turbines enables the generator to produce electricity. Water is discharges down a tailrace or canal back to the river.

#### ***Difference in perspective on environmental services***

Prior to RUPES, Bakun people regarded their resource conservation, protection systems as an IKSP that defines them and their spirituality, as responsible generation and steward of the borrowed resource. On the other hand, the HEC saw these efforts as a part of being a good community citizen, it did not recognize Bakun People as provider of a valuable environmental service and provided no compensation for its service. The HEC regards its voluntary/ social responsibility programs as payments whereas the communities in RUPES context see it as a token services.

#### ***The buyers of Environmental services (watershed)***

The HEDCOR and Luzon Hydro Company utilizes water from Bakun for power generation. The Bakun AC Plant produce 70 MW; the FLS Plant- 5.9 MW, the Lon-oy Plant yields 3.6 MW, the Lower Labay Plant - 2.4 MW. All in all selling 54million KWH to NPC.

#### ***Understanding the threats in environmental service***

Although the Bakun people use conservation practices, there is a severe degradation in the area. The adverse effect of forest fires, the bulldozing of lands due to increasing vegetable gardening on slopes takes a toll. And these have to be addressed both by the community and government.

#### ***The Payments/ Rewards***

The HEC have provided some benefits regulated by various laws and policies and defined through MOA between them and MLGU. These are statutory benefits.

In terms of tax payments mandated under government laws, where the HEC directly pay business tax and real property to the LGU treasury office, and the special privilege tax to the national treasury. They also support the host communities with some voluntary assistance such as, infrastructure projects, scholarship provision, assistance to cooperatives and people's organizations, selected farmer trainings, medical and dental assistance, and seedling dispersal program as part of their corporate responsibility (CSR). There are negotiated benefits implemented annually as contained in the MOA, there are non-MOA benefits to host barangays and an environment fee of PhP 350,000 annually equally divided among barangays.

The HEC expressed willingness to upscale these voluntary rewards and channel them directly to the communities provided that there would be marked decrease in silt and sediment volume in their facility during the rainy season. They therefore encouraged the communities to adopt sustainable land management practices such as agroforestry and natural resources management systems.

#### ***RUPES as a community empowerment mechanism***

The RUPES action research has walked through the Bakun community and stakeholders on the RUPES framework and activities which heightened their awareness and appreciation on the inter relationships of environment, economy and equity. They recognized the need to deepen "Kaalaman", (knowledge) "kabayahan" (capacity) kabuhayan (livelihood), "kalikasan" (environment) The community regarded the RUPES they walked through as an empowerment and capacity development experience. The RUPES orientation meetings with the BITO was emancipating helplessness due to ignorance. The Ethno Botanical Resource Survey documentation reinforced and preserved indigenous knowledge. The study on hydrologic function of the Bakun Water capacitated them to measure and value their resource. The assessment of all the benefits provided by the two HEC (Luzon Hydro Company and the HEDCOR Inc.) It opened their minds on the more sustainable and mutually beneficial partnership they each can nurture

with their domain. The cross visit to Kalahan Forest Reserve allowed them to gain insights on community empowerment ancestral domain and natural resources. The assessment of the current capacities of Bakun community and stakeholders to implement and sustain RUPES activities has shown potential action points, strengths, weaknesses, risks and opportunities. The formation of the Technical Advisory group composed of heads of line agencies was reassuring that government will pick up from Bakun for the mainstreaming of important learnings in agency program implementation. The formation of the technical working groups from line agencies and civil society and Non-government that assisted the Bakun community technically throughout RUPES was appreciated as sincere handholding. The training on water quality monitoring & management through floatation method developed skill on measuring stream flows and monitoring their water resource. The Participatory Poverty Livelihood Assessment (PALA) was most appreciated as it directly concerned their incomes and livelihood. In addition to the IKSPs on farming the different models and options on ever green agriculture on slopes were important inputs that the communities wanted to adopt and develop in their farms. The crafting of the Bakun Integrated Watershed Development and management plan (BIWDMP) was a legacy of Bakun, as it would ensure continuity of the initiatives of RUPES. The linking and networking that the RUPES has initiated is an intermediary service that helped Bakun negotiate for more sustainable payments for environmental services. The Bakun people have greater understanding of RUPES, the external appreciation for and value of trees, biodiversity and the relevance of sustainable soil and water conservation practices for themselves as well as for the downstream users and the generations to come.

Bakun acknowledge that RUPES is a long journey, but are thankful for the few steps, distance and obstacles conquered.

## Conclusion

In the action research, the question was: Can the environmental service rewards sustainably alleviate

poverty in Bakun? Can the negotiated payments for environmental services reduce poverty among traditional people whose protection of the environment has economically disadvantaged them? Experiences in the RUPES project sites suggest that the amount of per capita royalty distributions for water supply services to hydropower plant *alone* is not enough to raise people from poverty. For communities to significantly affect their poverty levels, they may need to layer in benefits streams from several environmental services. The Bakun domain and watershed is also a carbon sink that can be tapped for carbon sequestration. It is rich in landscape beauty and ecotourism potentials that can be developed for agro-eco tourism than can trigger gainful activities. Communities can optimize their IKSPs enhanced with evergreen farming in slopes through agroforestry farm models other environment friendly activities that generate income without reducing environmental services. The HEC, LGU and BITO programs may focus on these livelihood programs as they are the drivers and has direct impact to household incomes. The HEC obviously contributed to the access to basic social (education, health) and economic (livelihood) and physical infrastructure (FMRs, waterworks) support services however, the development indicators and assessment has not been established in the RUPES action research. The RUPES seed has just been planted and its growth and development rests upon a mutually responsive community – environment service provider/seller and the buyers – HEC and many more.

## Recommendations and Challenges

- a. **On Ownership and Roles:** Government officials and BITO need to reach understanding on complementary roles and shared responsibility they each play in payments for environmental services in Bakun.
- b. **On Royalties:** It is better to move from the redistribution of royalties to conditional payments dependent on environmental services outcomes. Effective use of the existing royalty funds requires locally agreed criteria and transparent mechanism. Further, there is a need to reinvest the payments to income

generating-environment nurturing programs and ensure trickle down benefits and sustainability of initiatives.

- c. **On Local Policies:** The MLGU should and BITO and HEC to separate environmental payments from corporate social responsibility and statutory taxes. The ADSDPP which defines the development dreams and aspirations as Bakun tribes should be the anchor of plans and programs. Institute local policy on rewards and sanctions on ES. The implementation of the BIWDMP will serve as a bargaining tool for negotiating conditional payments and rewards for ES. Since payments / rewards for environmental service is a voluntary transaction between seller and buyer, and is very difficult to achieve as it entails an empowered community and principled mutually beneficial bargaining, the MLGU and BITO need to closely work hand –in hand.
- d. **On national policies:** Seek alignment with the National Policy. The recognition of Ancestral Domain Title provide for a basis for financial compensation for environmental services that originate from the area. But further clarification of issues of rights and resources is needed within the national policy framework that is not free from ambiguity. There is a need to redefine host community and payments & rewards systems. Bakun, together with Kalahan has been a pioneer in recognition of indigenous people’s rights and can serve as learning ground for other IPs of the Philippines.
- e. **On RUPES replication:** The Bakun Rupes experience as a community empowerment development that builds upon community participation can be replicated or mainstreamed in development agenda of other government agencies. It can be adopted in Agrarian Reform Community Development (ARC) and in ARC cluster development plans in similar ICC and upland communities providing environment services.

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