

Maria Mynn Porciuncula-Alfonso presents..

Towards Sustainable Landscapes

Guidelines in regulating Aesthetics
and
Environmental Quality of the Landscapes

Towards Sustainable Landscapes

In 2003

I presented my Thesis –

Towards Sustainable Landscapes

Guidelines for regulating Aesthetics
and Environmental Quality of the Landscapes

to a panel of distinguished Architects and Landscape
Architects with Arch Horacio Dimanlig as my Thesis
Adviser to Arch Mary Ann Espina, Arch Cecilia Tence,
Arch Danilo Silvestre, Arch Paolo Alcazaren, Arch Efren
Aurelio, Arch Honorio Palarca and guests Arch Geronimo
Manahan, Ms. Gloria Lava, Arch Geoffrey Cardinal...

Towards Sustainable Landscapes

It is intended to be a guideline for local government
officials, environmental advocates and design
professionals to deal with the current

Environmental problems
but particularly in the
**Enhancement
the Philippine Landscapes.**

It detailed concepts to alleviate problems in air, water
noise and visual pollution using the most economical
natural living materials

PLANTS

Towards Sustainable Landscapes

Greening of our Environment

It is the **restoration, creation
and maintenance of plant
life**
in our towns and cities .

Towards Sustainable Landscapes

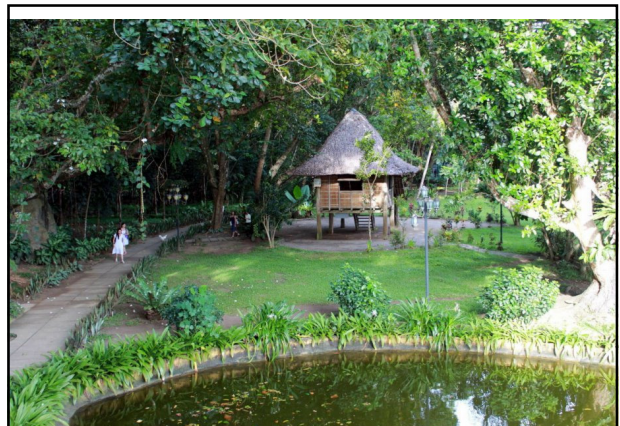
Urban Greening

It is one of strategies to mitigate the human health
consequences of increased temperatures resulting from

Climate Change.

Air temperature within Parks and Plaza especially
with abundant trees and plants are cooler than
other places

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BAHAY KUBO

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But
have we deeply
viewed them
lately?

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And unnoticed Landscape degradation...

Accumulation of Unrelated developments

**Destruction of Natural,
Scenic and Historic Sites**

Overcrowding of Poles and Electric cables

Copied and Franchised Landscapes

Noise, Water, Air and Visual Pollution

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Poverty and environmental degradation in Manila (Photo by David Lloyd)

Towards Sustainable Landscapes



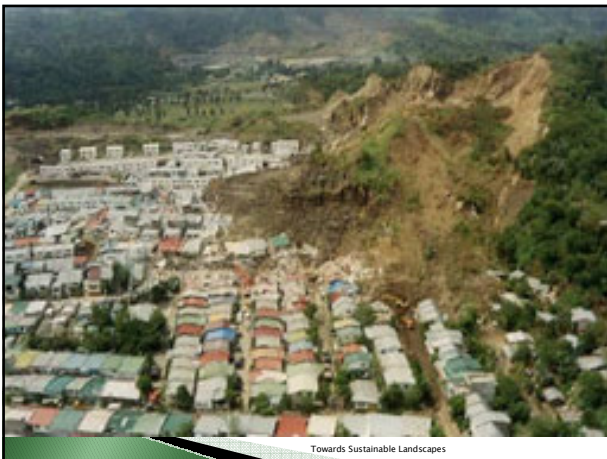


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Environmental Disasters and problems

In 2003, Cherry Hill, Bolinao Fish Kill, Ormoc Flash Flood, Pagatas Fall

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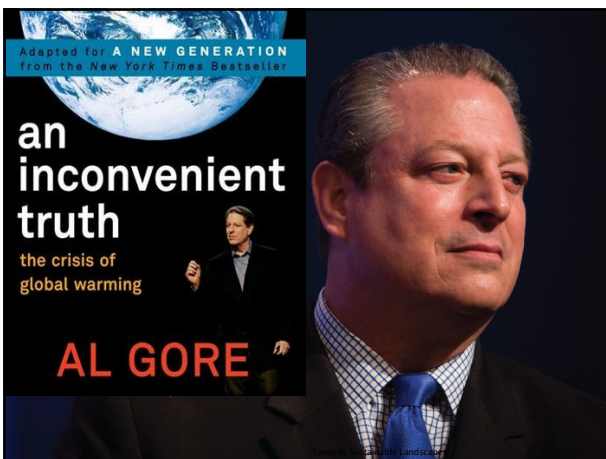
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Globally Earth Summit 1972

The United Nations Conference on the Human Environment (also known as the Stockholm Conference)

It was an international conference convened under United Nations auspices held in Stockholm, Sweden from June 5-16, 1972. It was the UN's first major conference on international environmental issues, and marked a turning point in the development of international environmental politics

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► 2009

Many experts warn that **Global Warming is arriving** at a faster and more dangerous pace than anticipated just a few years earlier. Copenhagen conference fails to negotiate binding agreements: end of hopes of avoiding dangerous future climate change.

► Level of **CO₂** in the atmosphere reaches **390 ppm** TODAY
350 ppm IDEAL

Mean global temperature (five-year average) is **14.5°C**,
the warmest in hundreds, and probably thousands of years.

REFERENCES

The Discovery of Global Warming December 2011 Timeline (Milestones) Here are gathered in chronological sequence the most important events in the history of climate change science
www.alp.org/history/climate/timeline.htm
butnowyouknow.net/...history/climate-change...

Towards Sustainable Landscapes

Locally

Philippine Agenda 21

**DILG Clean and Green
Programs**

Philippine Council for

Galing Pook Awards

[Asian Institute of Management]

ABS-CBN Bantay Kalikasan

And Recently

**R.A. 9003 , Philippine Ecological
Waste Management Act 2000**

Clean Air Act 1999

Clean Water Act 2004

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Wednesday, July 20, 2011 [News]

**DENR to Implement
President Noynoy's
National Greening
Program –**

**DENR's
National
Greening
Program**

**- Replanting Philippine
Forests in the Fight
Against Climate
Change**



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The NGP hopes to plant some **1.5 Billion trees** covering about **1.5 Million hectares** for a period of six (6) years from 2011 to 2016 in lands in the public domain.



**Executive Order
No. 26
The National
Greening Program**
Greening
the Philippines
to make a difference
in terms of
Human Development,
Economic Security
and Environmental
Security.

Towards Sustainable Landscapes

**New Landscape Designers
embracing environmental values**

- ▶ **Ian Mcharg**
- ▶ **Philip Lewis**
- ▶ **Michael Hough**
- ▶ **John Lyle**

**This aims to change the role of Landscape
Architects and its important contributions
in building sustainable towns and cities and
finding solutions to climate change.!**

Towards Sustainable Landscapes

Thus in embracing and practicing sustainability,
the Landscapes will survive in natural harmony
with the environment. Sustainable landscapes is
an alternative approach in enhancing our lives by
having back a

**Comfortable Living
Conditions,
Healthy Sites
and
Lovable Views.**

Towards Sustainable Landscapes

Like in landscape planning for

Energy Conservation,

the concept is to minimize the effects of heat and corresponding use of energy consuming climate control systems by improving the microclimate conditions. These require solutions in

**Vegetation,
Site Planning
and
Landscape and Building
Designs.**

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Objectives

- Encourage active participation of the local government especially the Barangay, business sectors and non-government and volunteer organizations in implementation of guidelines thru a

Handbook

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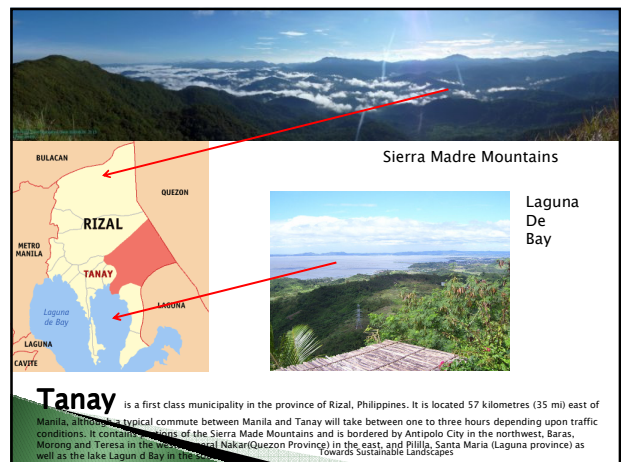
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Mga Usapang Barangay

Sa ilagaganda at Likas Kayang Pag-unlad ng Bayang Tanay, Rizal

Towards Sustainable Landscapes

Mga Usapang Barangay
Sa ilagaganda at Likas Kayang Pag-unlad ng Bayang Tanay, Rizal



Mga Usapang Barangay
Sa ilagaganda at Likas Kayang Pag-unlad ng Bayang Tanay, Rizal

Alam mo ba ang sikat na ng ating bayang Tanay

Dahil sa ating Daranak Falls, lagi na lang nasa TV commercials at pelikula, ganda ganda, ang linaw ng tubig, ang dami pa ring mga halaman



Towards Sustainable Landscapes

Mga Usapang Barangay
Sa ikakaunlad at likas kayang pagunlad ng bayang Tanay, Rizal

"Ay naku, mali ka diyan, hindi na ganoon ang Daranak Falls, malabo na tubig, may putik pa. Pinuputol ang mga puno sa paligid at madumi ang kapaligiran. Bawas bawasan mo ang pagpapanood ng pelikula, ang palabas lang iyon. O halika pasyalan natin ito at ang ating poblacion at makikita mo, ang sinasabi ko"

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Mga Usapang Barangay
Sa ikakaunlad at likas kayang pagunlad ng bayang Tanay, Rizal

Provide **simple** application of **Visual Analysis**

Inventory/Analysis

Basic resources
Surveys and Maps
Visual Analysis
Environmental Analysis

Priority Targeting

Identification of Best Sites
For Protection, preservation and Development

Recommendation

Mitigation, Proposed Development, Preservation of Sites

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Mga Usapang Barangay
Sa ikakaunlad at likas kayang pagunlad ng bayang Tanay, Rizal

Environmental Impact Assessment

Environmental Compliance Certificate

Carrying Capacity =
$$\frac{\text{Specific area used}}{\text{Average individual standard per area (sm/person)}}$$

Carrying Capacity is the maximum number of individuals that can be accommodated in an area without affecting the state of the environment, the level of satisfaction of the visitor, and the social culture of the host community" A formula by Boullon (1985)

Towards Sustainable Landscapes

Mga Usapang Barangay
Sa ikakaunlad at likas kayang pagunlad ng bayang Tanay, Rizal

Mga tuntunin upang mapanatili ang imahin ng ating mga lugar:

- Paglilista ng mga pook na mahalaga
- Pagusapan ang mga ito sa inyong barangay
- Mag-ipon ng mga maps, litrato, salaysay
- Ilista and mga pinakamalalagang lugar
- Magrekomenda ng mga possibleng pagbabago o pangangalaga dito
- Comulsulta sa mga NGO o ahensiya ng Gobyerno, kung nangangailangan ng higit na kaalaman.

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Mga Usapang Barangay
Sa ikakaunlad at likas kayang pagunlad ng bayang Tanay, Rizal

Tatlong bagay ba dapat tandaan upang mapanatili at mapaganda natin ang imahin ng ating

- Igalang ang natatanging katangian ng lugar
- Panatiliin ang kahalagahan at tunay na diwa ng lugar
- Pagmasdan ang ugnay-ugnay na elemento ng tanawin.

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Mga Usapang Barangay
Ilkas kayang pagunlad ng bayang Tanay, Rizal


Kagawad, bakit di mo nareport, me nagtatayo diyan ng Resort, walang pahintulot yan at makasisira pa sa ating tabing - lawa..

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Mga Usapang Barangay
Sa ikakaunlad at likas kayang pagunlad ng bayang Tanay, Rizal



Roads and Streets

Promotion of Walkways, Bike Lanes, minimization of vehicular traffic, planting of Trees and Plants along roads and streets not only for Beautification programs but to reduce air, wind, noise and visual pollution.

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Mga Usapang Barangay
Sa ikakaunlad at likas kayang pagunlad ng bayang Tanay, Rizal



In entering towns, we can plant trees that are different from roadside trees to provide a strong contrast needed to set off an important marker or entry arch.

Towards Sustainable Landscapes

Mga Usapang Barangay
Sa ikakaunlad at likas kayang pagunlad ng bayang Tanay, Rizal



Common Name
Acacia
Scientific Name
Samanea saman

Through roads, such as National Roads and Highways, intended for fast And longer trips plant trees that maintain a constant character and a contious Rhythm. The faster the traffic flow, the longer the length of the repeating Module and the more open the road should be.

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Mga Usapang Barangay
Sa ikakaunlad at likas kayang pagunlad ng bayang Tanay, Rizal

For streets along national roads, highways, and major roads/
“Highly pollution-resistant” trees:

Name	Scientific name
Acacia	Samanea saman
African Tulip (English)	Spathodea Campanulata
Caballero (Spanish)	Caesalpinia Pulcherrima
Golden Shower (English)	Cassia fistula
Fire Tree (English)	Delonix regia
Gemelina (Tagalog)	Gmelina arborea
Ipil-Ipil (Tagalog)	Leucaena leucocephala
Camachile (Spanish)	Pithecellobium dulce
Mahogany (English)	Swietenia macrophylla
Manguim (English)	Acacia mangium
Narra (Tagalog)	Pterocarpus indicus
Palawan Cherry (English)	Cassia nodosa

Towards Sustainable Landscapes

Mga Usapang Barangay
Sa ikakaunlad at likas kayang pagunlad ng bayang Tanay, Rizal



30/09/2009 10:58 AM

tricycles, tricycles, tricycles



Towards Sustainable Land

Here are some suggestions for the local government unit that can be undertaken immediately:

- **Provide sidewalk in the streets.**
- **Remove all structures blocking the sidewalk**
- **Identify streets that can be a vehicle free pedestrian mall or convert streets as one way only. Regulate access of vehicles at restricted hours. This will encourage people to walk safely and comfortable**

• **Provide bike path ways in streets. We can paint a portion of the street and mark it as Bicycle lane.**

• **For new subdivision, encourage developers to provide schools, shops, workplaces and market within the area so people will be less dependent from vehicles. Disallow housing only subdivisions.**

Improve the microclimate of roads and streets we can do the following

Through zoning ordinances, require new construction to strictly follow setbacks along roads and streets, provide setbacks at rear side for services and other unsightly activities

Encourage construction of uneven building heights

Plant trees that do not block flow of wind

Plant trees and plants to improve the microclimate of roads and streets and to lessen the noise and air pollution



On local streets where through and fast traffic is discouraged, tree planting should provide shade. We can specify different types of plants and trees with abundant overhead foliage in an uneven spacing clusters



Parks and Plazas

Rizal Monument at Tanay park



Tanay Church Patio

“Puso ng Bayan”



Parks demonstrate dramatically different scales and diversity.

Parks **improve the microclimate** of the area and staying in the park than inside of one's homes will lessen consumption of energy

Parks are more than just a place to stay and relax in, it has an array of

cultural, recreational and entertainment amenities

and most of all

improve the health of the public.

Name

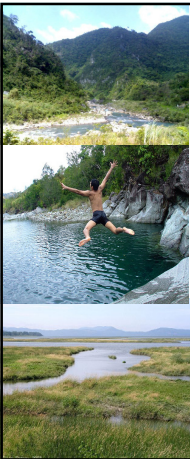
Acacia
African Tulip (English)
Botong (Tagalog)
Katmon (Tagalog)
Narra (Tagalog)
Dapdap (Tagalog)
Golden Shower (English)
Fire Tree
Mahogany (English)
Alibangbang (Tagalog)
Palawan Cherry

Scientific name

Samanea saman
Spathodea Campanulata
Casuarina equisetifolia
Dillenia philippinensis
Pterocarpus indicus
Erythrina variegata
Cassia Fistula
Delonix regia
Swietenia macrophylla
Pilstigma malabaricum
Cassia nodosa



Waterways



Modern development are unfavorable to our environment.
These resulted to:

Increased water runoff

Increased flash flooding

Degradation of surface water

Polluted water from water runoff

Soil erosion

Forest destruction

•Saving the watershed

Preservation and enhancement of the natural vegetation especially in the mountain area. But prioritize **vegetation that will provide income to upland people.**



Dumagats of Upland Tanay

•Plant Fast growing Trees

The plants below are not only fast growers but

Multi-purpose trees

used as

fuel wood, construction materials, poles, erosion control, medicinal, manufacturing raw materials....

They are source of livelihood of rural people, thus it is beneficial to have better yield.

More trees means more water to hold on trees roots and less water runoff.

For planting in the mountains; fast-growing trees (for harvesting in less than 4 yrs.):

Name	Scientific name
Mangium	Acacia mangim
Agoho (Tagalog)	Casuarina equisetifolia
Eucalyptus	Eucalyptus spp.
Madre de Cacao	Gliricidia sepium
Yemane (Tagalog)	Gmelina arborea
Giant Ipil-ipil	Leucaena leucocephala
Paraíso (Tagalog)	Melia azedarach
Datiles (Tagalog)	Muntingia calabura
Alibangbang (Tagalog)	Pilostigma malabaricum
Kamachile (Spanish)	Pithecellobium dulce
Bayabas (Tagalog)	Psidium guajava
Duhat (Tagalog)	Syzygium cumini
Anabiong (Tagalog)	Trema orientalis
Raintree (English)	Samanea saman

Controlling the water runoff In rural areas

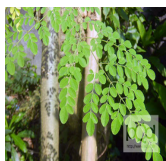
Use **Perennial Crops** with permanent roots to hold the soil in place

Promotion alley cropping

It is a system of intercropping rows of foodcrops with fast growing trees or shrubs generally practiced in flat to gently rolling topography⁶. For places with inter-cropping/Food crops and fast-growing trees that can be planted side-by-side:

For places with inter-cropping/Food crops and fast-growing trees that can be planted side-by-side:

Name	Scientific name
Langil (Tagalog)	Albizia lebbek
Karikis (Tagalog)	Albizia lebbekoides
Akleng Parang (Tagalog)	Albizia procera
Alnus (English)	Alnus japonica
Neem (English)	Azadirachta indica
Kadios (Tagalog)	Cajanus cajan
Calliandra (Spanish)	Calliandra calothyrsus
Thailand Shower	Cassia siamea
Dapdap (Tagalog)	Erythrina orientalis
Kakawete (Tagalog)	Gliricidia sepium
Yemane (Tagalog)	Gmelina arborea
Acid Ipil-ipil	Leucaena diversifolia
Malunggay (Tagalog)	Moringa oleifera
Kamachile (Spanish)	Pithecellobium dulce
Bayabas (Tagalog)	Psidium guajava
Katuray (Tagalog)	Sesbana grandiflora
Siniguelas (Tagalog)	Spondias purpurea
Mahogany (English)	Swietenia macrophylla
Duhat (Tagalog)	Syzygium cumini



Site amelioration techniques

By plowing along the contours of sloping land, it is possible to hold water in furrows while it soaks into the soil

Terracing, by carving long steps into the hillsides and using relatively flat surfaces of the steps for growing crops.

Slowing stream courses



Check Dams



Gabion Dams

Control Water Chemistry

Water coming from agricultural and industrial areas must be controlled effectively at the source before polluted water they produce, enter the waterways.

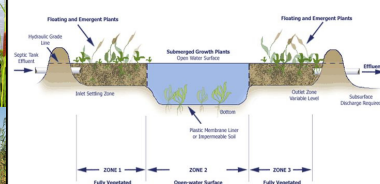
Less use of agricultural fertilizers and pesticides means cleaner water, better crops.

For large farms, industrial and commercial establishments, they can eliminate the waste water before entering the rivers and shores using waste water treatment plant, a highly recommendable alternative is

Constructed Wetland.

Constructed wetland

is a passive pond or cell that filters and removes pollutants by routing waste water over substrate of gravel or similar material that supports plants that will filter and absorb pollution, then turning water fit for irrigation and fishes and marine life"



In urban areas,

- Use of detention and infiltration basins
- Collect rainwater for re-use
- Collect rainwater coming from gutters and downspouts
- Use porous paving for walkways, sidewalks
- Store excess water in cistern

In urban areas,

- Let water flow in swales than concrete

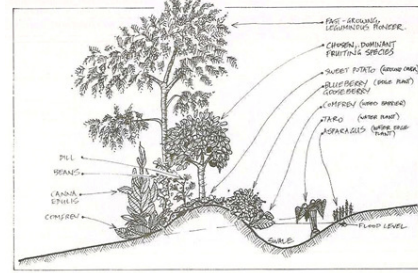
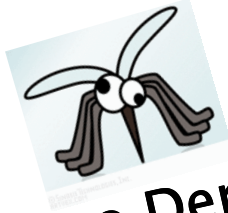


FIGURE 6.4 Trees planted off swale bank to take advantage of wet-season water.

In urban areas,

- Let water flow in **swales** than concrete



Paano Dengue?

A natural approach of repelling or getting rid of mosquitoes, consider these plants that repel mosquitoes.



Catnip



Marigold



Mint



Citronela

Kantutay

For controlling soil erosion and surface run-off:

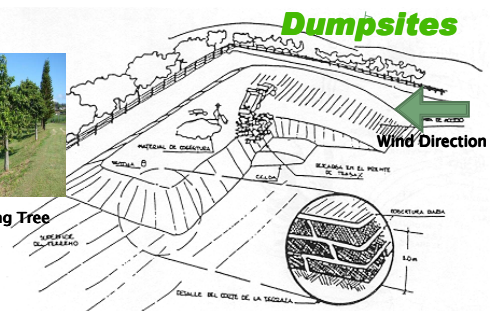
Common Name	Scientific name
Villosa (Spanish)	Acacia villosa
Red Calliandra	Calliandra calothyrsus
Fireball (English)	Calliandra haematocephala
Thailand Shower (English)	Cassia siamea
Antsoan dilao (Tagalog)	Cassia spectabilis
Fire Tree	Delonix regia
Kakawete (Tagalog)	Gilircidia sepium
Ipil-ipil (Tagalog)	Leucaena leucocephala
Kupang (Tagalog)	Parkia roxburghii
Alibangbang (Tagalog)	Pilostigma malabaricum
Gumamela (Tagalog)	Hibiscus rosasinensis
Pinya (Tagalog)	Ananas comosus
Napier Grass (English)	Penicum maximum
Vetiver grass	Vetiveria zizanioides
Setaria	Setaria spp.



Dumpsites



Ilang ilang Tree



Now, most towns have Sanitary landfills as prescribed by law.

Trees for Dumpsites, will provide
Aesthetic Improvement,
Site Barrier and as well as Deodorizer.

Common Name
Dapdap (Tagalog)
Balite (Tagalog)
Ilang-ilang (Tagalog)
Palosanto (Tagalog)
MacArthur Palm
Bunga de China

Scientific name
Erythrina variegata
Ficus balete
Canganga odorata
Triplaris cumingiana
Ptychosperma macarthurii
Veichia merrillii

From FMS Report, 1993,1995 DENR

Towards Sustainable Landscapes

Reuse

Direct Reuse



There are goods especially coming from China that can be discarded easily due to its cheap cost. It means they can be disposed during garage sales, buy and sell, tangege swap meets like in Kamuning. This means 'disposal' or 'ukay' (second hand clothes; things from abroad). Some people will be buying these items, this means **direct reuse**. Advantage of direct reuse is it saves energy in production and transport (by reusing a product rather than making a new look or product).

Towards Sustainable Landscapes

Mechanical Recycling

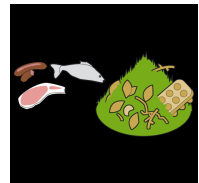
This means reshaping and remanufacturing of old materials into new form. Some recyclable materials are paper, bottles, aluminum steel, plastics rubber, metals and wood.



Towards Sustainable Landscapes

Environmental reassimilation

By letting nature do the work, materials reintegrate into the landscape by its natural process of decomposition. This method depends on the decomposing activity of invisible bacteria and microbes. They are present in composting and natural sewage treatment.

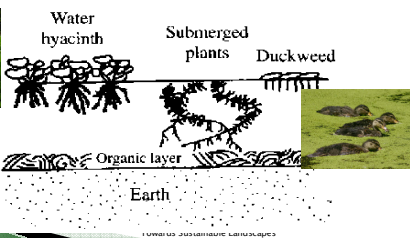


Composting

Towards Sustainable Landscapes

Natural Sewage Treatment

The **wetlands** is a natural sewage treating bodies of water. As the wetlands are disappearing in our rivers and lakes, we look for a new solution, and it is **constructed wetlands** discussed earlier that may help in this matter



Towards Sustainable Landscapes



An effective way to solve the waste problem is through **education focused on change in lifestyles and consumption patterns.** These programs in cooperation of the local government must ensure that wastes are reused, recycled and regularly collected.


Towards Sustainable Landscapes

Mga Usapang Barangay
Sa ikakaunlad at likas kayang pagunlad ng bayang Tanay, Rizal

Conclusion


I passed my Thesis.

I focused in my hometown Tanay



Towards Sustainable Landscapes

Mga Usapang Barangay
Sa ikakaunlad at likas kayang pagunlad ng bayang Tanay, Rizal



I have **Hanbook** in Tagalog Dialect, I discussed how an urbanizing town of Tanay—the commercial hub in the eastern Rizal with its valuable resources, farms, mountains, orchards and varied community groups of fishermen, farmers, businessmen, livestock owners, indigenous people dumagats and remontados.... peace loving people, can improve the quality of life through the guidelines on how to plant the right Trees and Plants in the right places and other valuable measures towards Sustainable Landscapes .

Towards Sustainable Landscapes

Mga Usapang Barangay
Sa ikakaunlad at likas kayang pagunlad ng bayang Tanay, Rizal

After nine years, have I done my part in imparting these guidelines to my townmates ?

Towards Sustainable Landscapes

Mga Usapang Barangay
Sa ikakaunlad at likas kayang pagunlad ng bayang Tanay, Rizal

Remember the Ondoy Tragedy in 2009 ?

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Mga Usapang Barangay
Sa ikakaunlad at likas kayang pagunlad ng bayang Tanay, Rizal



Towards Sustainable Landscapes

Mga Usapang Barangay
Sa ikakaunlad at likas kayang pagunlad ng bayang Tanay, Rizal

I failed to share my learnings and knowledge. My handbook never been published. I tried once to seek funds from World Bank, but my project was not selected.

Towards Sustainable Landscapes

**At the same time,
our local government needs
a major change in
administration and management
and/or be trained in
good governance.**

There is **huge GAP**
in knowing how to implement
these guidelines in towns and cities...
Thru a simplified easily comprehensible
Handbook
or other worthwhile means
for less literate poor people.


GAGAPIN
ang
simplified easily comprehensible
Handbook

Sustainability concepts and issues with us for
many years, now, we have to take concerted
actions in its

Implementation
to the most affected sector of the society –
the Poor.

An understanding of climate change and the
future scenario of our environment will truly help
people to have a change of heart.

This may ignite them especially if the


Local Good Government Unit
will assist them in finding them
jobs or more effective a new
source of livelihood.

This should be integrated in the works of the Local Government
unit thru the Department of Interior and Local Government. Let
us start with a simple, and effective Handbook that should be
readily available and understood by all.



The growth and Sustainability of
towns and cities
should delve deeply in its

**Development
stage.**

We,
Academicians, Architects,
Professionals understood climate
change and Green principles but
this should be
**shared in the most
effective /easy way to
majority of the people
especially the poor.**

Mga Usapang Barangay
Sa ikakaunlad at likas kayang pagunlad ng bayang Tanay, Rizal



After getting my masteral degree in 2003, I started teaching Architecture and Landscape Architecture, now, I am faculty member at the University of Santo Tomas in Manila-College of Architecture.
At UST, we have a 3 semester specialization subject named Specialization in Urban landscape Architecture which I lead. This further my knowledge in the issues and problems pertaining climate change and sustainability. Similar with the basis, we aim to improve the quality of the environment in by providing lessons in Roof Garden, Vertical landscaping, urban farming, Planting in Containers, Sustainable Landscape designing and constructing geared for the urban Metro Manila.

Towards Sustainable Landscapes

Mga Usapang Barangay
Sa ikakaunlad at likas kayang pagunlad ng bayang Tanay, Rizal



Vegetable Garden at Roof



Vertical landscaping

Towards Sustainable Landscapes

Mga Usapang Barangay
Sa ikakaunlad at likas kayang pagunlad ng bayang Tanay, Rizal

In our country, the most crucial issue is to
reduce poverty
of most of our countrymen. They will be the link to
help solve climate change and sustainability by

**Educating them in the simplest way
of these environmental problems.**

**This simplest way that
will provide them livelihood**

Towards Sustainable Landscapes

Mga Usapang Barangay
Sa ikakaunlad at likas kayang pagunlad ng bayang Tanay, Rizal

In my part I will continue this great pursuit
to trully impart the real value of
Plants and Trees
for the betterment
of our
environment.



Thank You. **Maria Mynn Porciuncula Alfonso**

Towards Sustainable Landscapes