

Case Study

Sustainability Science from the Mountains:

Mountains:

Ecology and Culture Center
Bendum, Mindanao

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Environmental Science for Social Change (ESSC), Philippines



Role of science UNESCO

Science

Technology

Innovation

Policy

PARTNERS & Networking

Generational
change and
-
local
opportunity

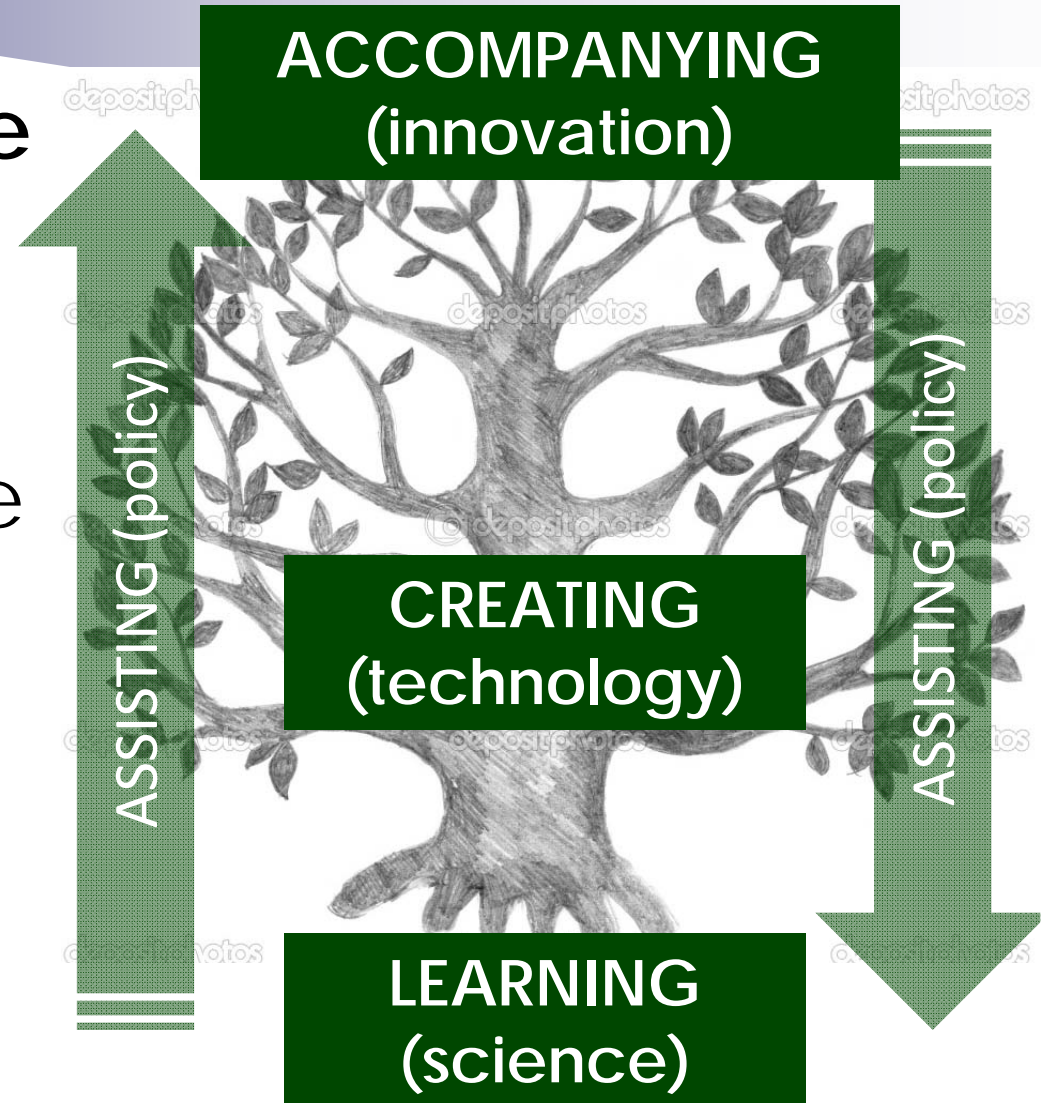
Consumption &
expectations
-
without leaving
out people &
environment

Knowledge for
social
transformation
and -
fundamental
shift in global
economy

Value Premise

Sustainability science

rooted in being
human and
authentic in service
to human
development &
environmental
interaction



Science needs to serve

- ✓ Science has to **serve the poorest** communities – equity issues
- ✓ Science has to serve the needs of the people and **work with inherent knowledge**
- ✓ Essential for people to **learn how to manage** their environment and resources
- ✓ Young professionals can learn from communities and remain committed to integrate **local knowledge to economic development**

Bendum center, focus on

- ✓ Youth leadership in peace and ecology
- ✓ Professionals & Regional Education
- ✓ Local – National government



Bendum center for transformation

Work on environmental & social sustainability

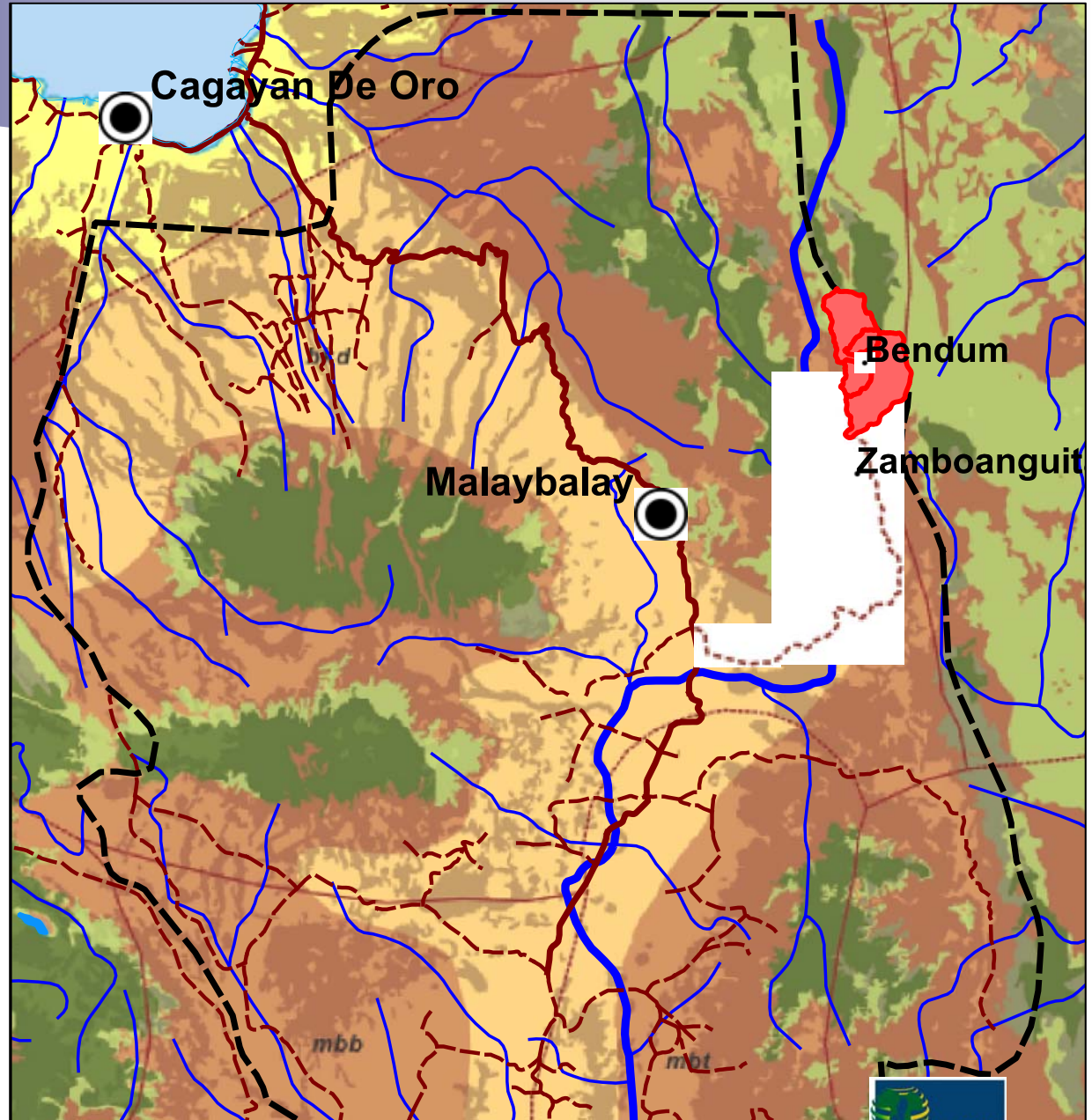
-rooted in area context:

- ✓ the landscape
- ✓ the people
- ✓ their socio-economic realities
- ✓ scientific & technical capacity of all levels of local government

Has a lot to do with MaB

1. Urgent need - transformative science - **truly starts from where people are**
2. Improve youth's capacity to **understand risks and opportunities**, social and environmental
3. Need to **learn to negotiate** – respect is now functional where cooperation is needed
4. Science has to be **within domain of society** - not only business
5. Scientific knowledge has to **internalise meaning of social transformation**

Upper Pulangi, Mindanao



Pulangiye, Bukidnon



RIVER PEOPLE: Traditionally along the Pulangi; Sitio Bendum is their center

These local community, indigenous and migrant live by the interior forest. Forests and resources are their *gaup*, or ancestral domain, from where they draw their cultural integrity.



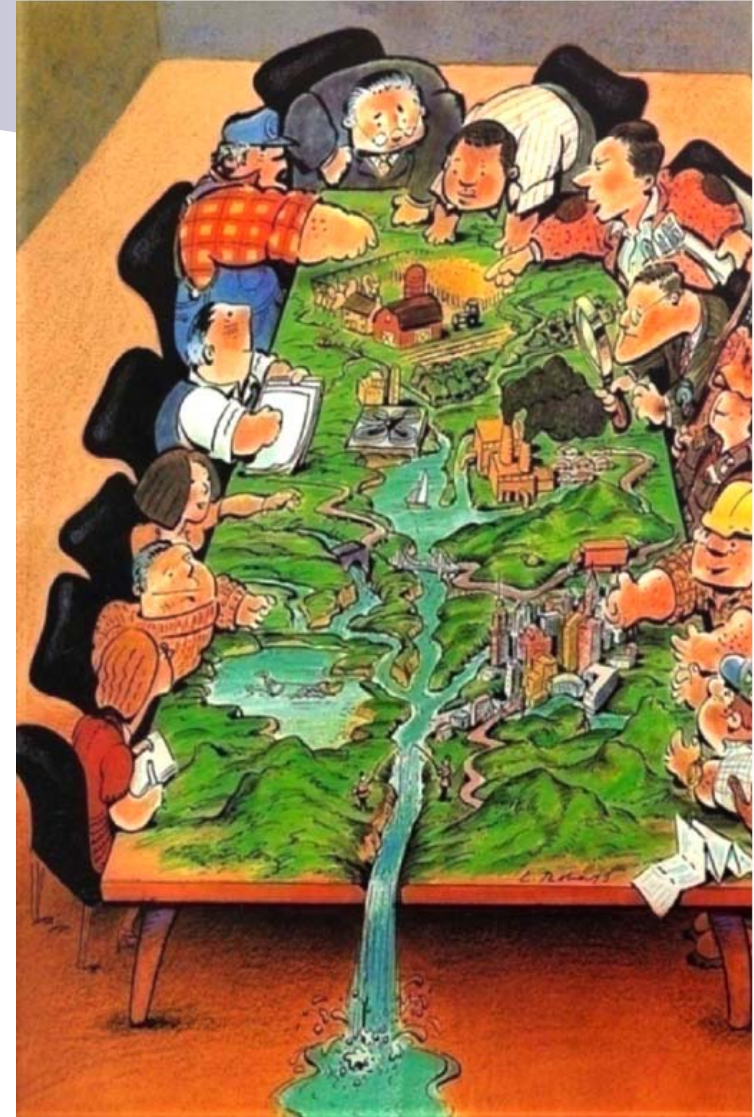
Seeks from local government basic services: education and health

Participates in decision-making and development planning of the watershed

Seeking capacity with option of returning home

Way of working

- Demand-driven for change
- Analysis and dialogue
- Scenario-building
- Supports cultural knowledge as incorporator of responsible science
- Builds policy by demand



Sustainability science interface

UNESCO Principles		Science (learning)	Technology (creating)	Innovation (accompany-ing)	(Policy) (assisting)
ESSC Partners in Networking					
Generational change / Local opportunity	Youth, landscape & livelihood	Hydrological cycle, biodiversity, soil nutrients & cropping	Water systems rainforestation, agroforestry	Focus & management	Village officials, awareness & policies
Consumption/ expectations / without leaving out people & environment	Profession-als in human security & envt'l sustainability	Learn what is development from below More ethically economics	Engage with culture & strength of people	Always space for friends not merely sector, Human security (Ogata-san)	Capacity and budget
Knowledge for social transformation / Shift economy	Insti-tutional cooper-ation in DRR	Awareness of how science works & how communities need to respond	Find adaptation options & methods	"Negotiations" for a better deal Devise an agenda of social segregation in risk areas	PES

Science in learning:

- Integrate geology, biodiversity, forestry and hydrology knowledge, **find and fill gaps** in Upper Pulangi
- Integrative **studies on cultural relations**, practices, and knowledge
- **Strengthens innovations of ANR** as a scientific approach to community forest management and water resource regeneration
- Disaster risk studies for the **watershed upstream-downstream**
- **Modelling** of watersheds and rainfall-runoff **with community empowerment**
- Land cover change & **land use impact using remote sensing** to reduce risks & degradation
- Analysis of coastal river **flood hazard zones**

Technology in creating:

- Documentation of cultural **swidden practices**, resource extraction in the area (food security)
- **Migration** trends and analysis
- Filing for **indigenous land rights and basic services**
- **Historical knowledge**, awareness of typhoon occurrences in the area & response
- Socio-economic impacts and **industry limitations – gap analysis & scenarios**
- **Youth** training programs, dialogues, and **capacity building**
- Development of **centres for sustainability**

Innovation in accompanying:

- **Community planning** for resource management and human development
- **Local government planning** offices integrating community concerns and development of partnership agreements
- **Socially vulnerable** communities exposed to hazards are identified to give government a realistic basis to build **adaptive capacities** to climate-change
- **Youth skills & leadership** training
- Key stakeholders gather through **common interest in understanding ecosystem** and human security services

Progressing through policy to assistance:

- Training materials for **capacity building**
- Criteria developed for site selection & **site assessment** for low-cost housing
- Local youth actively take part in development and actively **engaging with village councils for opportunity**
- Effective **budget timing** & allocation
- **Feedback** to policy and analysis

Indigenous youth skills & leadership training

Total of 8 weeks lived-in training

MODULE 1:
preliminary activity,
self & team building

MODULE 2: cultural
identity

MODULE 3: culture of
peace

MODULE 4:
environmental
stewardship

MODULE 5: state laws
& policies

MODULE 6: leadership
skills

Overriding: psycho-spiritual awareness
& skills training workshop

Bridging youth & Science: integrating human development with NRM

Part 1: Classroom-based learning

Development theory	Response shifts	Resources	Development plans	Responses
<ul style="list-style-type: none"> - Human development & MDGs - Human security - Rights-based approach - Sustainable livelihoods approach 	<ul style="list-style-type: none"> - Food & population - Climate, energy, risks & disasters - Analysis of regional wars, disputes & upland insecurity - The occupy movement 	<ul style="list-style-type: none"> - Forest & management - Watershed approach - Mekong, PES - Mining, issues & mass media - Carbon payments 	<ul style="list-style-type: none"> - National development & markets - Feeding 8 billion & mobilizing - Human rights concerns linked to environmental issues - Social analysis 	<ul style="list-style-type: none"> - REDD+ - Poverty eradication - Earth restoration/reconciliation - Approaches to peace - Human development reminders

dual-campus program between the UN University for Peace in Costa Rica and Ateneo de Manila University in the Philippines, specifically for students under the Asia Peacebuilders Scholarship, funded by the Nippon Foundation.

Bridging youth & Science: integrating human development with NRM

Part 2: field/forest youth engagement

Value of tradition, incorporating development efforts	Unpeace-fear situation: immobilised & insecure vs. youth options & response	Cultural responses: self-identity, planning	Natural resources	Social & economic networking; MDG successes	Wrap up
Culture & history that have defined opportunities today	Arms, mines, outmigration for domestic labor (women) & manual labor employment (men)	Indigenous peoples rights, cultural integrity vis-à-vis NRM & human development: education, language youth – identity & skills children	Coffee, abaca, forest, water, land	Government, community, business, basic services review, conflict	Integration and personal capacity

Research engagements with Belgian Universities

Modeling agrarian and population dynamics in the Philippines
(MAPDIP), 2011-2015, FRFC-FNRS. *Partners: FUNDP, ULB*

Establishing strategic partnerships in research to strengthen local governance in land and water management towards greater human security in Mindanao (EPaM), 2010-2014, PIC-CUD.
Partners: FUNDP, Gembloux, UCL

Building local capabilities in participative water resources management in the Philippines (BLOC), 2005-2008, PIC-CUD.
Partners: FUNDP, Gembloux, UCL

Building a GIS curriculum in Southern and Central Philippines
(GEOTEACH CENSOPHIL), 2005-2006, EU. *Partners: FUNDP, Hochschule Karlsruhe-Germany*

Participative management of forest resources in the Philippines
(using GIS and RS technologies), 2000-2003, PIC-CUD. *Partners: FUNDP, UCL*

Masters & PhD research and exchange program

From Belgium to Philippines

- 1 PhD
- 8 Masters
- 2 batches, FUCID summer exchange

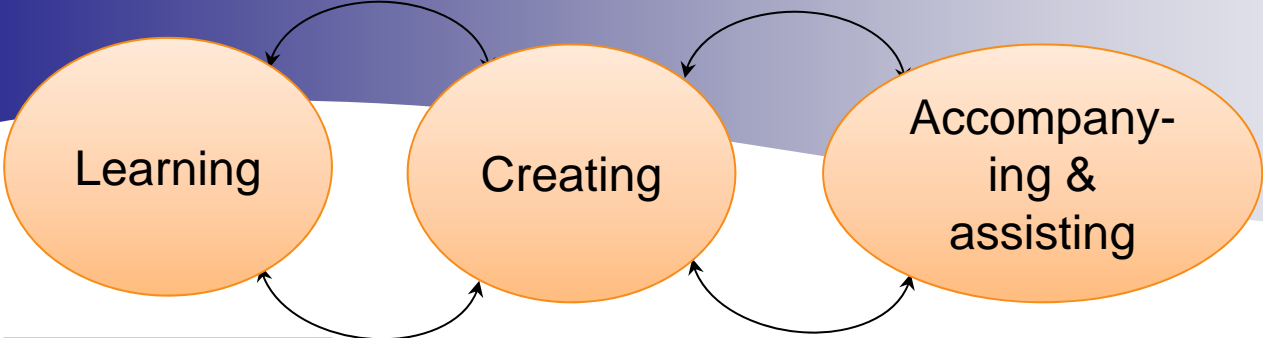
From Philippines to Belgium

- 2 PhD
- 4 Masters

Research topics: forest cover analysis,
modeling landuse change,
hydrogeopedology, understanding
migration and marginality



DRR Partnerships



Xavier University
CDO

Philippine
Working Group
activities

CUD-Belgium
University of
Namur

Geodata Institute
Southampton UK

Homeless
Peoples
Federation PHI

Quiapo Diocese

Hilti Foundation

UNESCAP

Simbahang
Lingkod ng
Bayan

Asia Forest
Network

Reconciliation
with Nature Asia
Pacific

Geodata Institute
Southampton UK
methodological

UNESCO
Sustainability
Science

Jesuit Refugee
Services – Asia
Pacific

Global Ignatian
Advocacy
Network-Ecology
joins water for all

Partners providing
counterpart
resources &
activities

Counterpart
projects & activities
under collaborative
development



Partnering

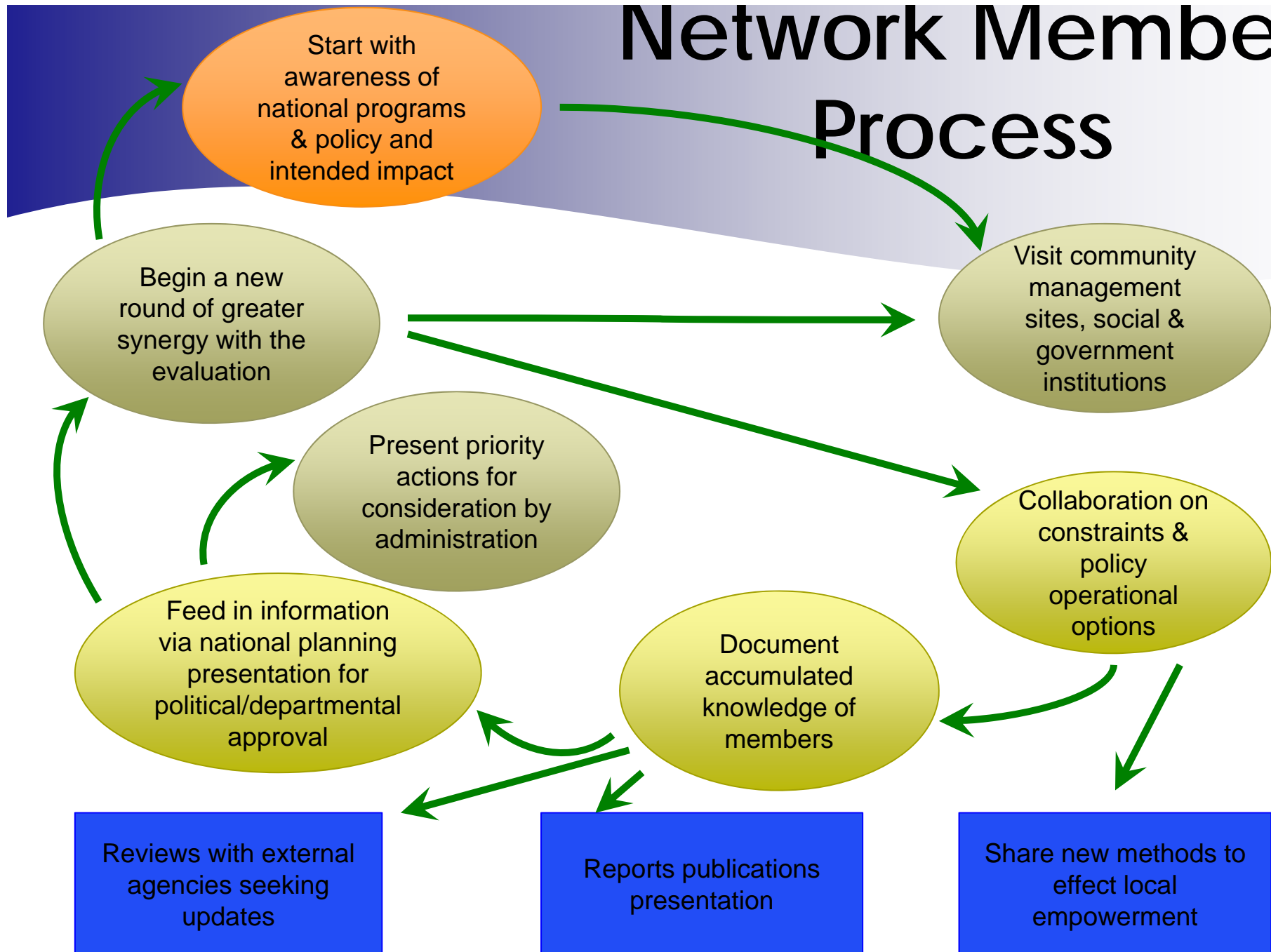
- Youth, landscape & livelihood
- Professionals in human security & environmental sustainability
- Institutional cooperation in DRR

Once-in-a-generation change -
CHANGE HERE!!!!

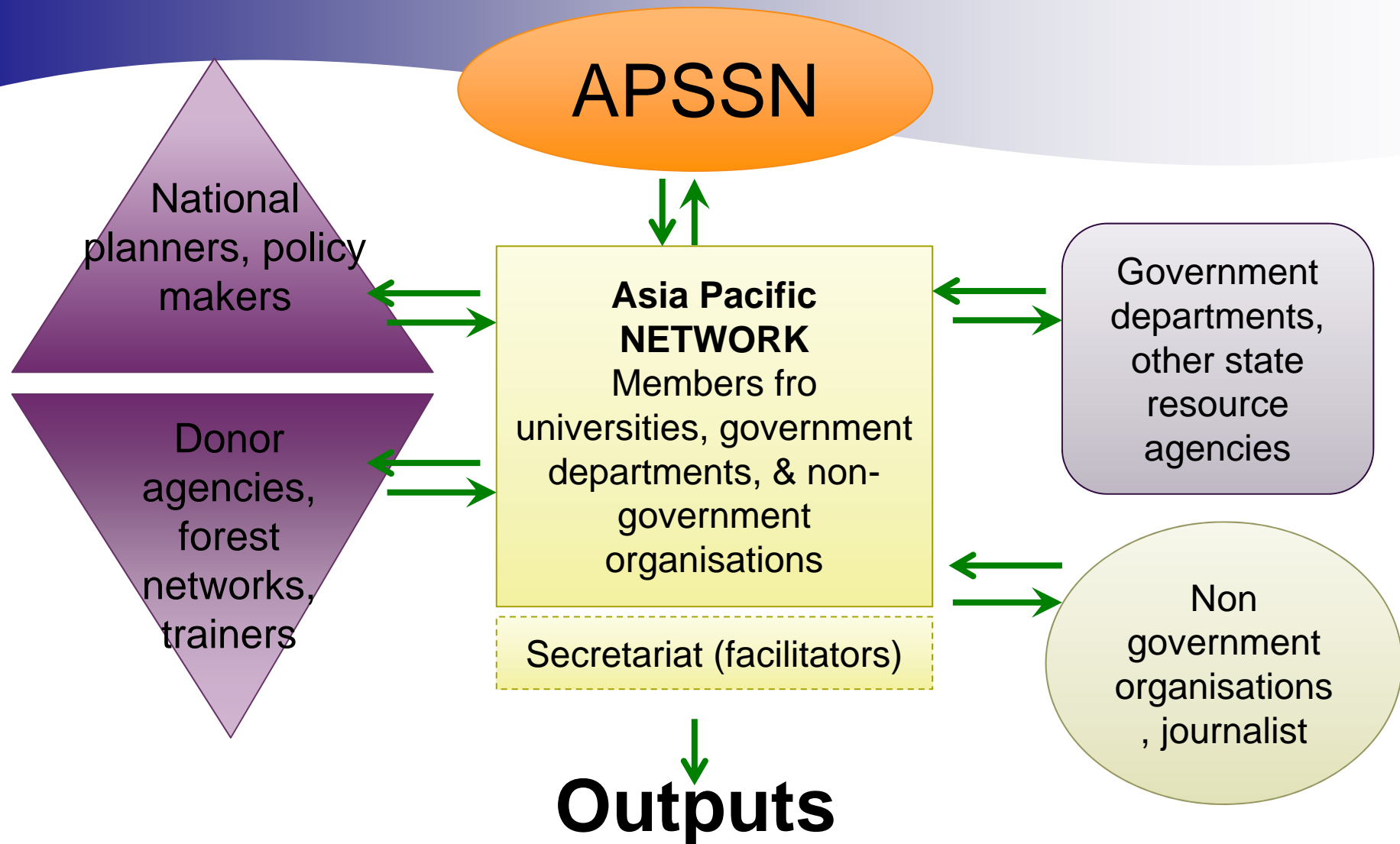
Transforming SELF,
then society!!!

Calling
science of
SERVICE!!!

Network Member Process



Proposal for APSSN



APSSN Outputs

1. Establish a **knowledge base for each nodal partnership** based upon adaptation of Sustainable Science Philippines
2. Build **stakeholder profile of government, governance and communities**
3. Exchange **experiences and best practice** in workshops, bilateral visits and website of common resources
4. Visit field environments and **engage local communities and other decision makers**
5. Assist in the development of **research strategy and implementation documentation**

Sustainability Science Centres

Regional

- **Ecosystems Services for Poverty Alleviation**, *Bangladesh & West Bengal*
- **Tarumitra**, *Patna, India*
- **Culture and Ecology Centre**, *Bukidnon, Philippines*
- **Kampong Cham**, *Mekong flood plains, Cambodia*
- **Community Learning Centres (CLCs) Programme**, *UNESCO-Bangkok*
- **National Resource Centre for Non-formal Education (NRC-NFE)**, *Patan, Nepal*
- **The Bush Hut**, *Yarra Bend, Melbourne, Australia*
- **Research Centre**: *University of Malaya, Malaysia*
- **Centre of Buddhist Studies**, *Hong Kong*
- **IUCN Commission on Education and Communication**, *Bangkok*
- **Buddhadharma Foundation**, *Bangkok*
- **Kursus Pertanian Taman Tani (KPTT Agricultural Training Center)**, *Indonesia*

Sustainability Science Centres

Global

- **GIAHS**, *FAO-Italy*
- **Man and the Biosphere Reserves**
- **Sustainability Science**, University of Southampton, UK
- **Ecology Centre**, Loyola University Chicago, USA
- **Ignatius Centre and Farm**, Guelph, Canada
- **Green Muslims**, USA
- **Center for Environmental and Sustainability Education**, Florida Gulf Coast University, *USA*
- **William Jewel College, Center for Justice and Sustainability**, Missouri, *USA*
- **The Tibet Center: Contemplative Sciences Center**, University of Virginia, *USA*

Institutions associated with Sustainability Science Workshop in Kuala Lumpur, Malaysia, 4-5 April 2013

Sustainable Science Transforms:

- **Translates** immediately to livelihood options and innovation
- **Provides knowledge** for social transformation – and self transformation
- **Facilitates access** to basics MDGs
- Builds scientific community for problem response
- **Improves** not only GDPs and income – more on quality of life and human development

Thank you!

For more information about ESSC and center for sustainability science, please check our website at:

www.essc.org.ph and

<http://ecologyandculturecenter.essc.org.ph/>,

respectively

You may also subscribe for free to our regular Sustainability Science publication:

<http://sustainabilityscience.essc.org.ph/>

