



Introducing MAAP, its partners and the Bataan Integrated Coastal Management System (ICM) : Implications to NATECH2016

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ABSTRACT

- ▶ *About the Philippines , a typical coastal area*
- ▶ *About Bataan , its ICM Framework & ICM Tools*
- ▶ *About Barangay Alas-asin , Mariveles, Bataan (MAAP location)*
- ▶ *Relates with MAAP VMGOs (vision, mission, goals, objectives) & philosophy on extension or community outreach activities*
- ▶ *5 Areas in ICM (MAAP direct or indirect contributions to)*
 - ✓ *Natural and Man-made hazard Prevention and Management (related to NATECH2016)*
 - ✓ *Habitat Protection, Restoration and Management*
 - ✓ *Water Use and Supply Management*
 - ✓ *Food Security and Livelihood Management*
 - ✓ *Pollution and Waste Management*
- ▶ *Other MAAP Contributions*
- ▶ *Future MAAP Contributions (Implications to NATECH2016 and E-ASIA Joint Research Project)*
- ▶ *References*
- ▶ *Concluding Remarks*



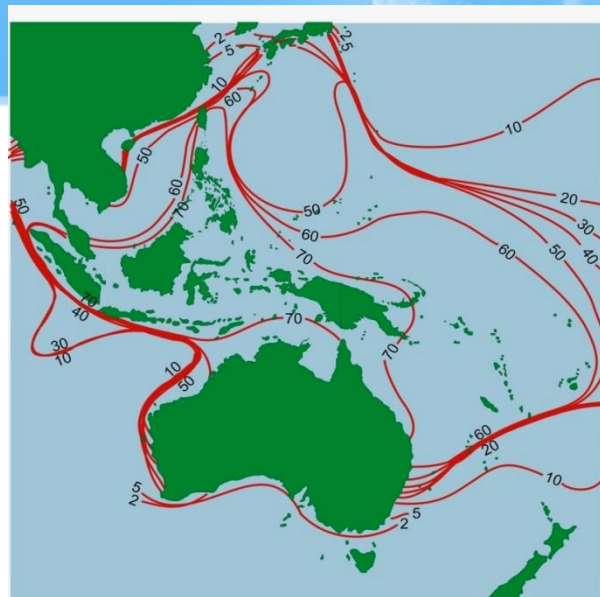
The Philippines in Context

- An archipelagic country consisting of 7,100 islands
- 62 of its 79 provinces are coastal (78%)
- 832 of the 1,496 municipalities are coastal (56%);
- Of the 11 municipalities and 1 city of Bataan, only 1 is land-locked
- Part of Bataan is located in the 190-km coastline of Manila Bay, **1 of the finest** but highly impacted natural harbors in the world;
- Of the 76 million Filipinos in 2000, 40 million resided in the coastal areas (52%)
- There were 227 persons/km² in the coastal areas in 1990 & increased to 286 persons/km² in 2000.
- 80% of coastal households were rated as falling below poverty threshold in 1996



The Philippines in Context

- ◆ Located in the world's center of marine biodiversity
- ◆ Lies at the apex of the Coral Triangle, the Amazon of the Seas
- ◆ Second among the CT6 in reef area of 2.6 M ha



Coral reefs

486 species of hard corals
50+ species of soft corals
2,400 species of reef fish

Seagrass

19 out of 60 species in the world or about 55% of the number of species in East Asia



Coastal areas in the Philippines are estimated to make an economic contribution of 60% of the GDP – fisheries, coastal tourism, transportation, energy production and industries

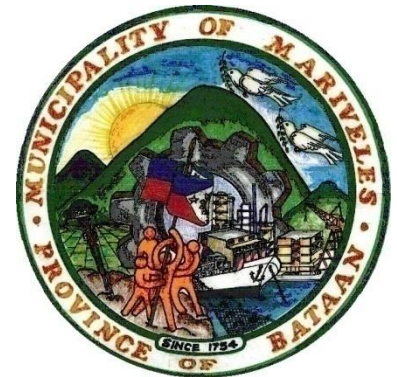
Mangroves

47 true mangrove and associated species belonging to 26 families

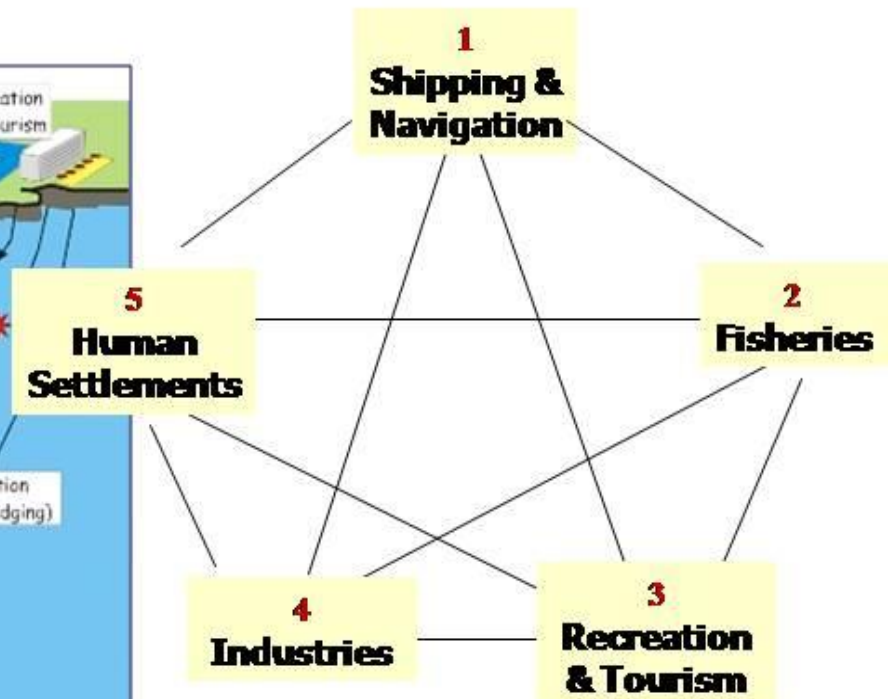
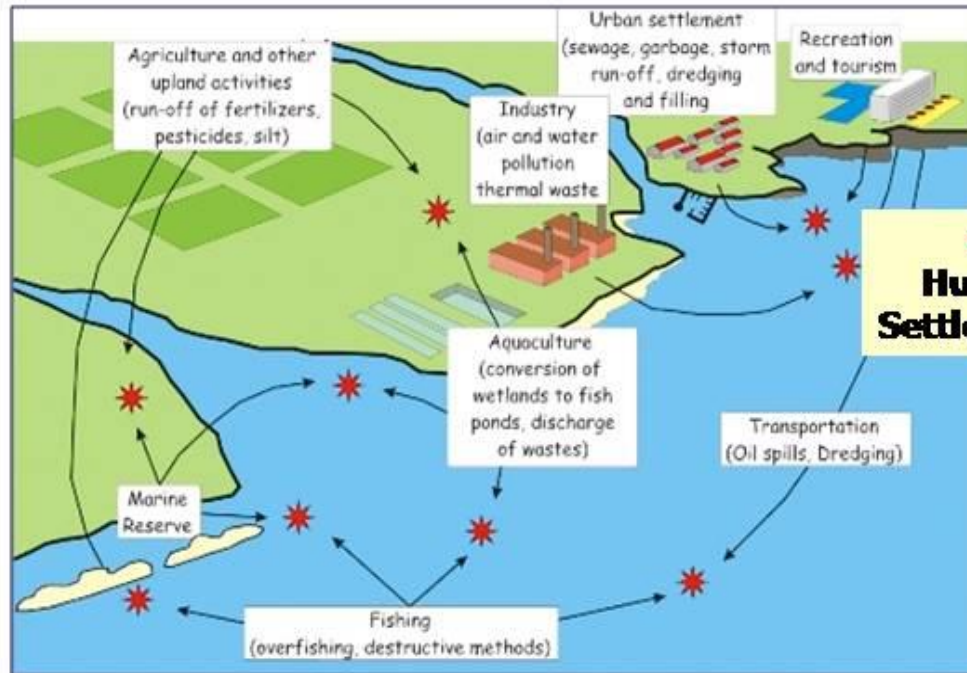


About MAAP Location: Mariveles Municipality

- ▶ Mariveles - first class Bataan municipality
- ▶ total population of 85,780 spread among its barangays with a population growth rate of 4.71% per annum
- ▶ High employment rate of 30%
- ▶ located in the cove at the southernmost tip of the Bataan Peninsula, 165 kms. from Manila
- ▶ Rich in Agricultural & aquatic resources, mineral deposits of granite & basalt & forest products like vines & bamboo
- ▶ Mariveles - host of the very first economic zone in the country, the Bataan Economic Zone
- ▶ Mariveles covers a total land area of 15,920 ha. or 153 kms. representing 12% of Bataan's total land area



Multiple Use Conflicts



- ◆ **Overexploitation (municipal and commercial fisheries)**
- ◆ **Habitat degradation (declining catch rates)**
- ◆ **Pollution from land and sea-based sources**
- ◆ **Erosion and siltation**
- ◆ **Impacts of climate change and vulnerability to natural disasters (50.3% of its total area and 81.3% of the population)**

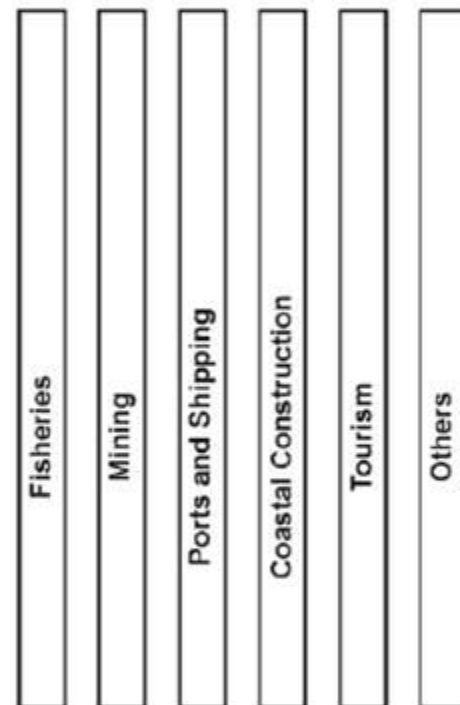
Governance Practices in Coastal Management

■ Sectoral management

- Categorizing human activities into sectors
- Different agencies assigned to manage each sector
- Activities in the coastal area are regulated separately
- Does not recognize that coastal areas have distinctive characteristics that necessitates different management approaches



■ Failure to prevent the rapid deterioration of coastal areas and marine environment



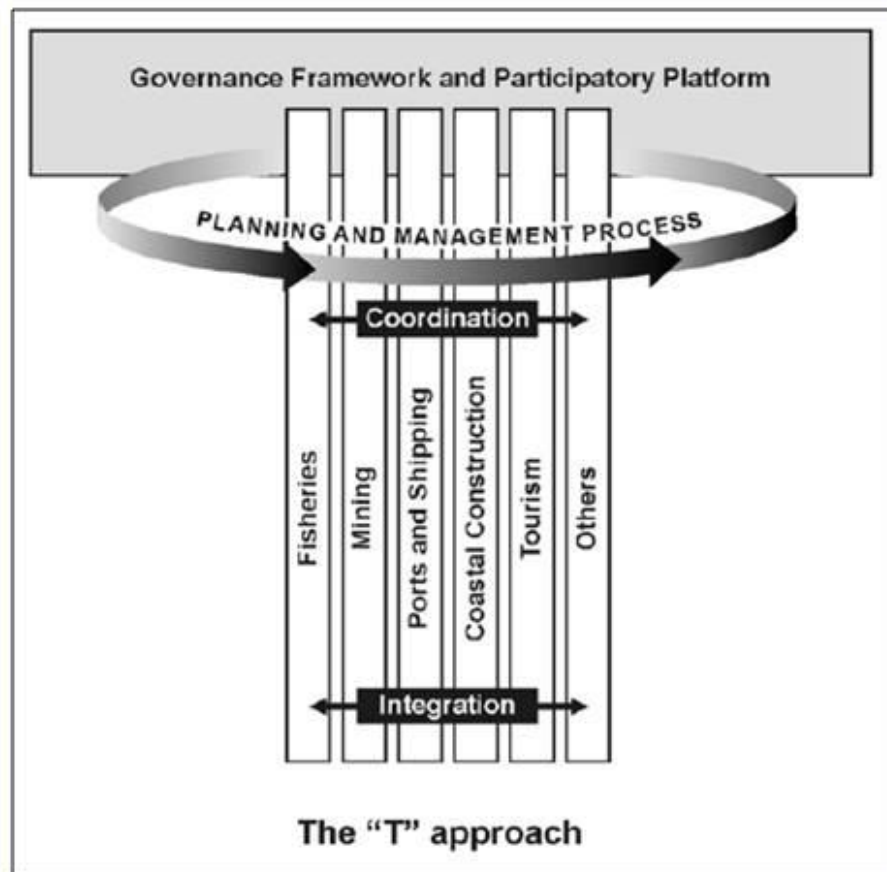
The "I" approach

Chua, 2009

Managing the coast as an integrated system

◆ Shift in mindset from:

- ◆ seeing parts to seeing whole
- ◆ reacting to the present problems individually to looking at the future collectively
- ◆ seeing people as reactors to involving their participation
- ◆ purely scientific management to managing human behavior

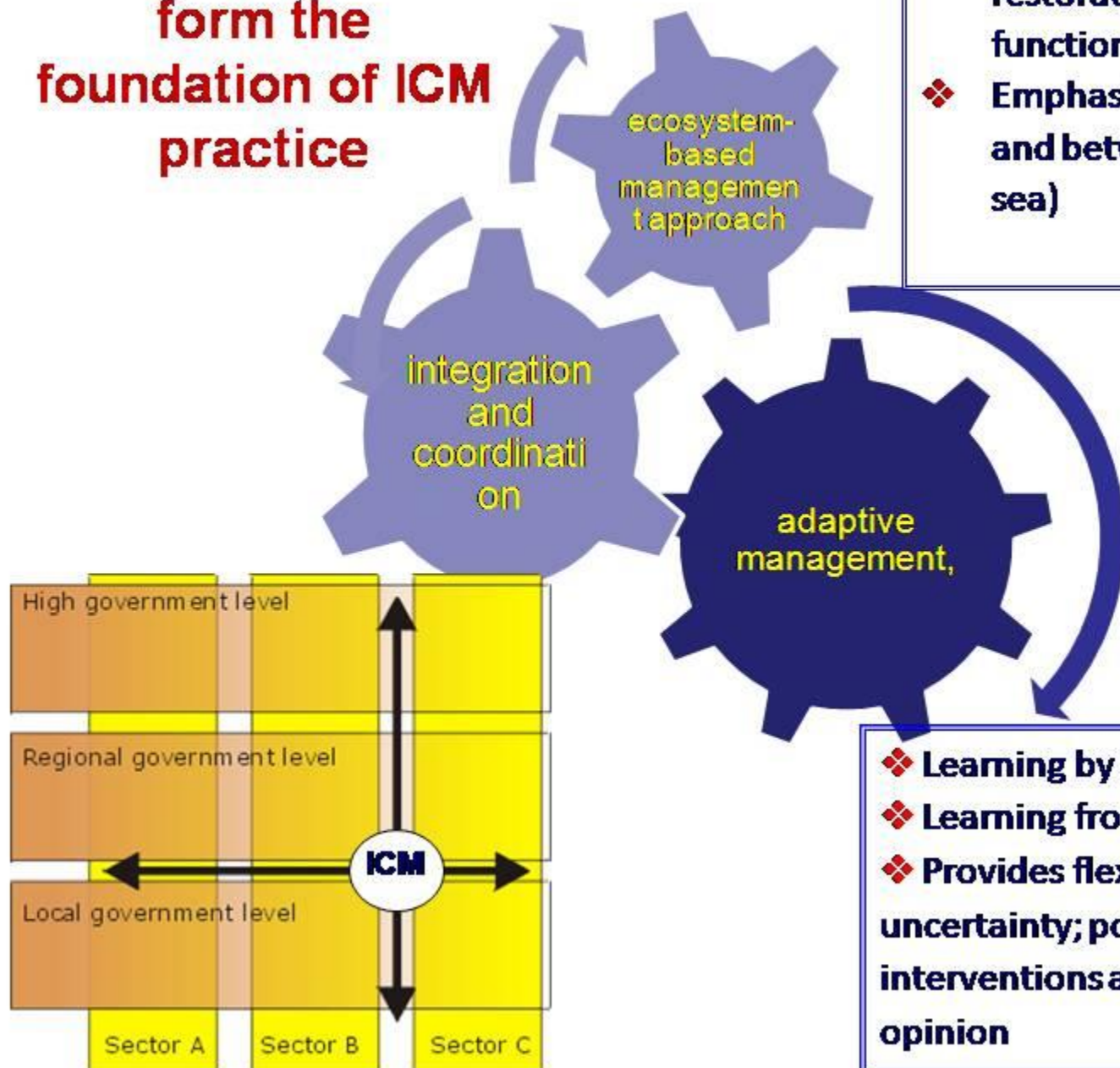


Chua, 2009

Defining ICM

- **Generally NO** accepted definition of ICM but there is widespread consensus on its features
- **Integrated: policy and functional integration**
 - ⊕ Cross sectoral programs and plans
 - ⊕ Mainstreaming of ICM plan into socioeconomic development plans of government
 - ⊕ Vertical integration of responsibilities among various levels of government and between public and private sectors
- **Coastal: land-sea interaction, connectivity**
 - ⊕ Cross disciplinary among the sciences, science and technology, economics, socio-political and law
- **Management: enabling and strengthening governance**
 - ⊕ Strategic planning to implementation and monitoring and evaluation of strategies over time

Principles that form the foundation of ICM practice



- ❖ Emphasizes the protection and restoration of ecosystem structure, function and key processes
- ❖ Emphasizes the connectivity within and between systems (land and sea)

- ❖ Learning by doing
- ❖ Learning from experience
- ❖ Provides flexibility to act in the face of uncertainty; policy changes and political interventions and changes in public opinion

Defining the coastal zone/area

- ◆ **Philippines: Republic Act 8550 (Fisheries Code of 1998)**
- ◆ **In the context of ICM, defining the scope is an essential part of the ICM process but **flexibility** is needed to adapt to multiple management conditions**
- ◆ **Program needs and focus**
 - ⊕ **Administrative boundaries**
 - ⊕ **Physical features of the area (i.e. existence of an area with high ecological significance or critical ecological processes)**

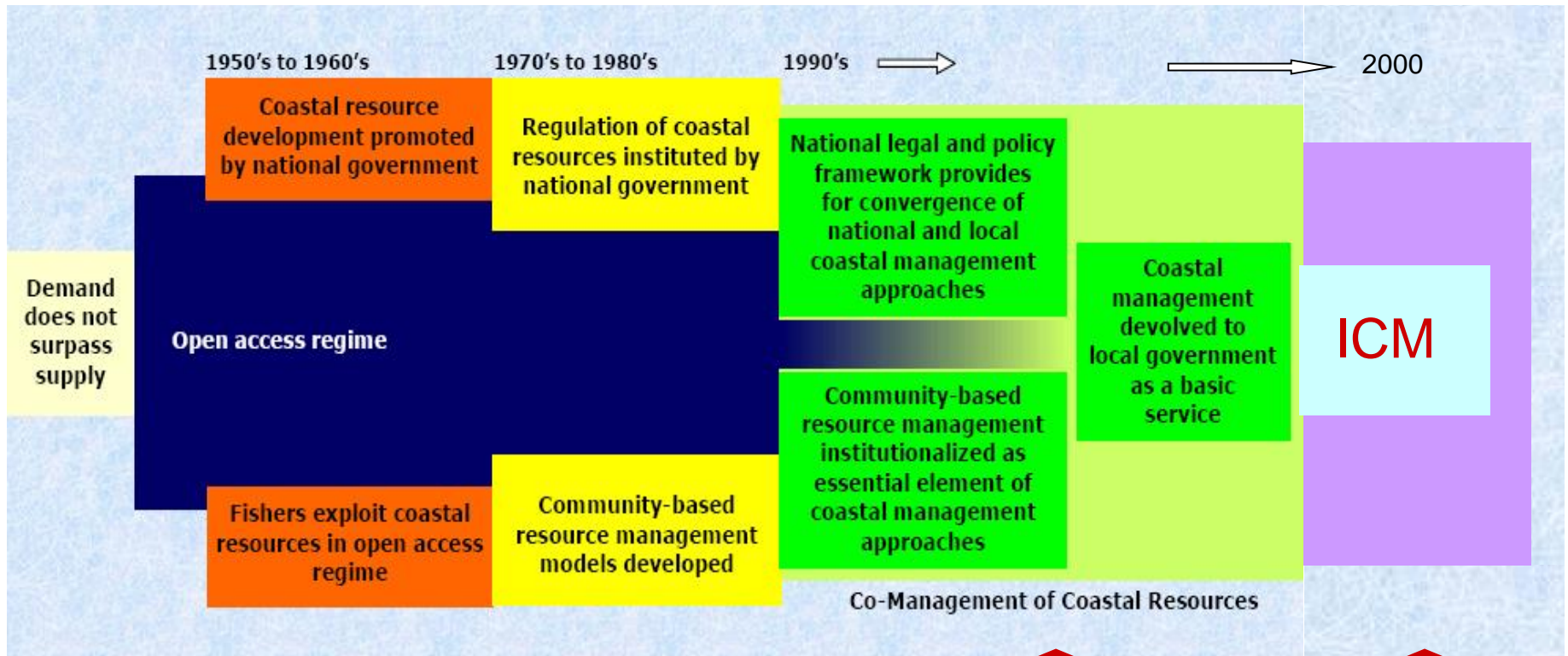


Operational Boundary of the Bataan ICM Program

10 coastal
municipalities, 1 city
and 1 land-locked
municipality



ICM Timeline and scaling up in the Philippines

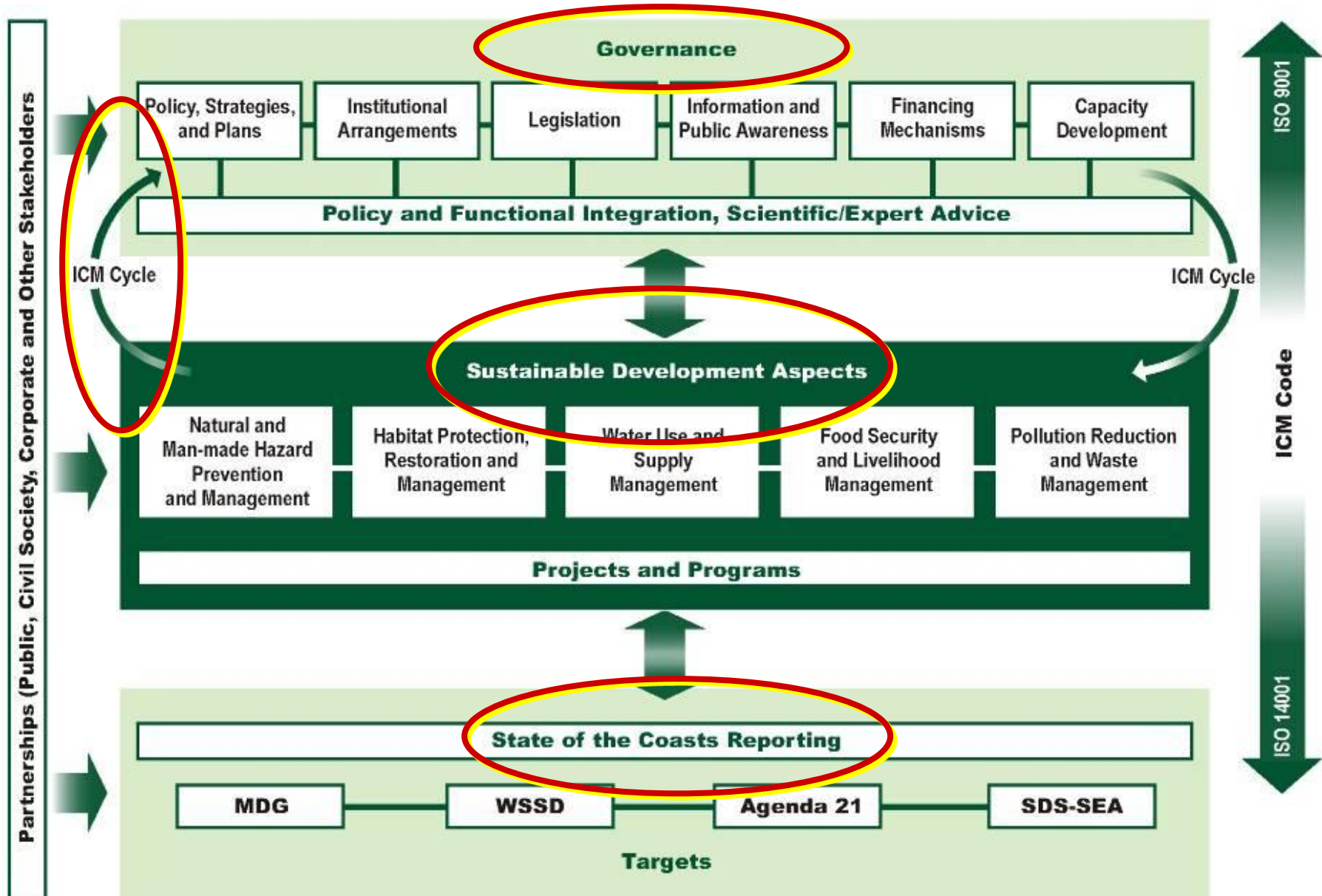


Modified from White et al., 2006

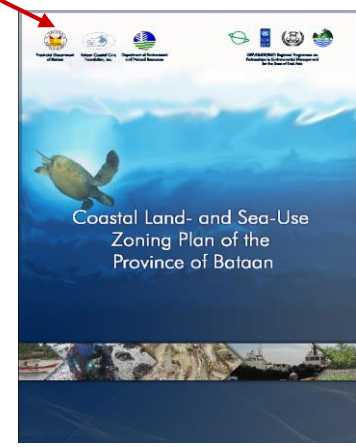
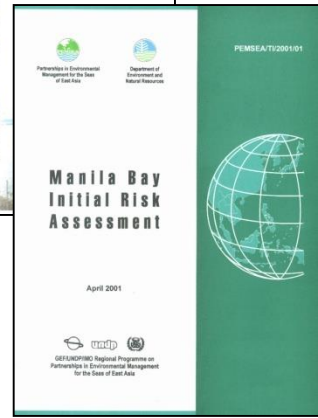
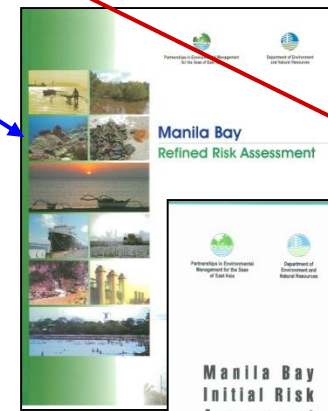
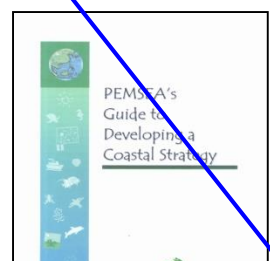
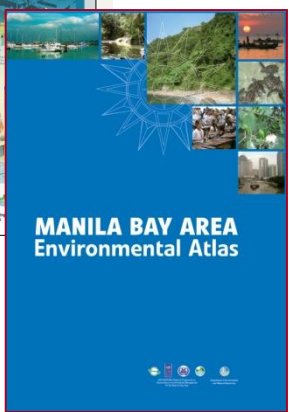
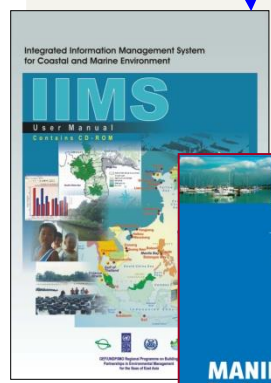
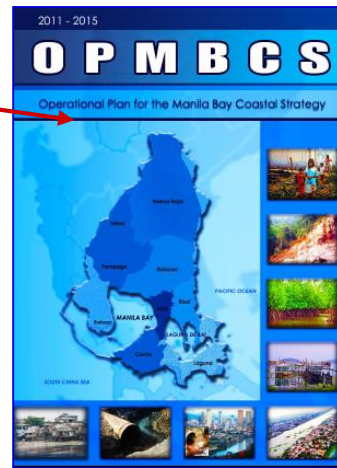
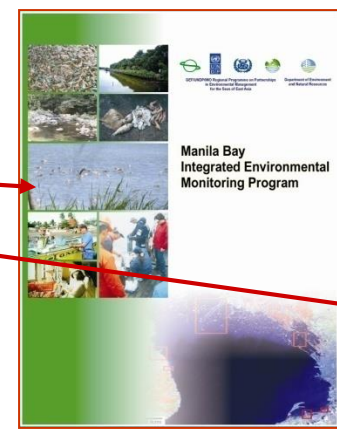
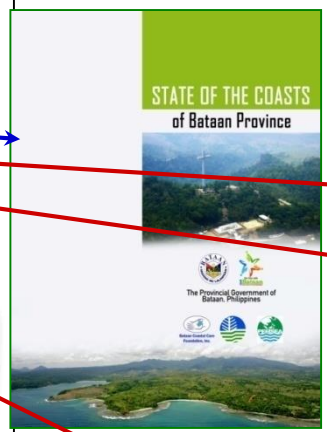
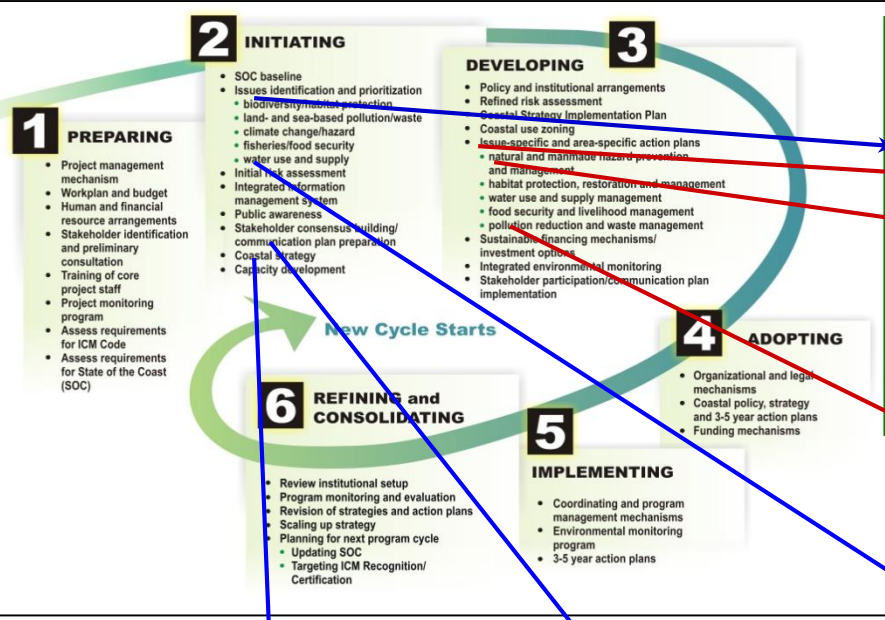
- Local Government Code (1991)
- Fisheries Code (1998)

- Executive Order 533 (2006)
- SDS-SEA (2003)
- PDP 2011-2016
- ICM Bill

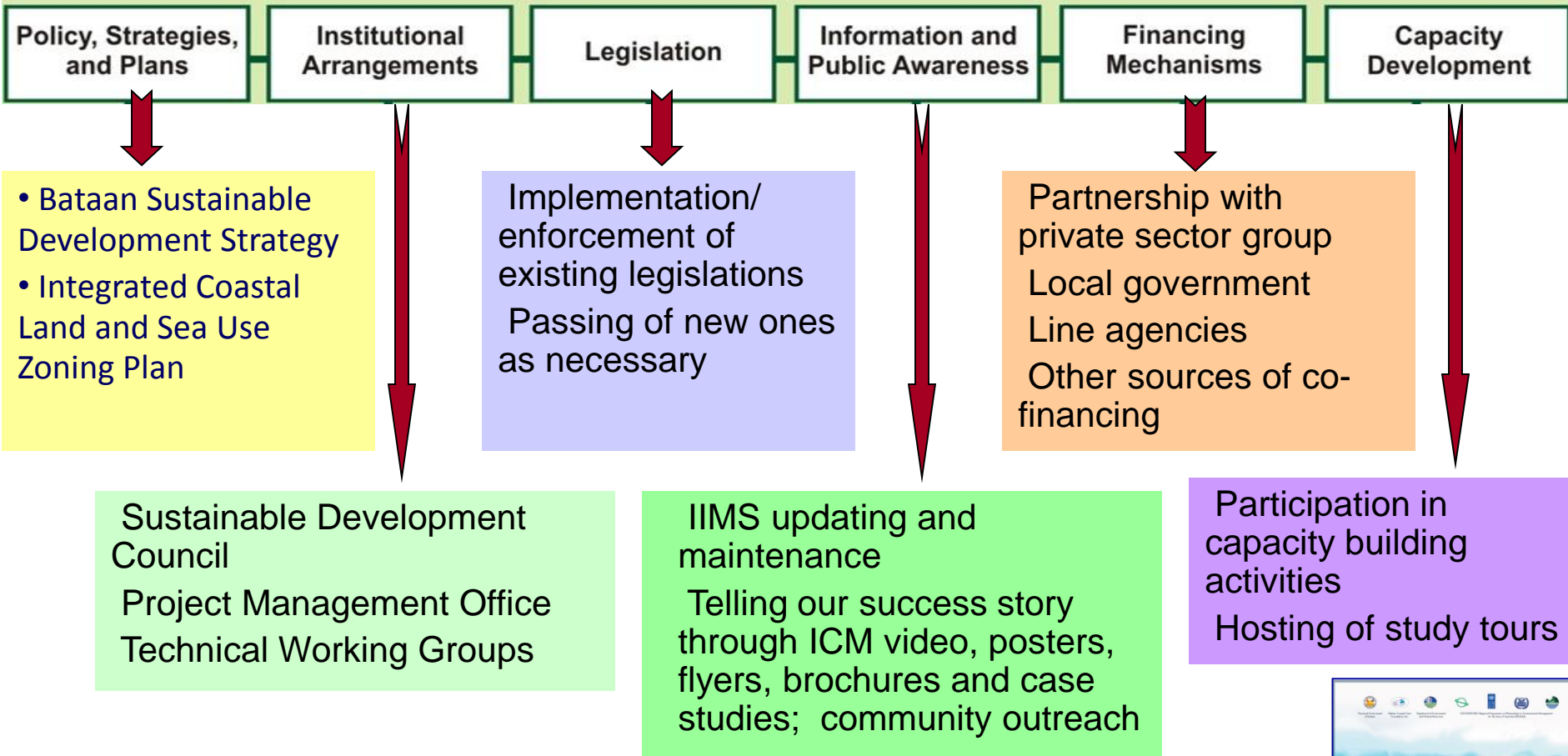
Framework for Sustainable Development of Coastal Areas through ICM Implementation



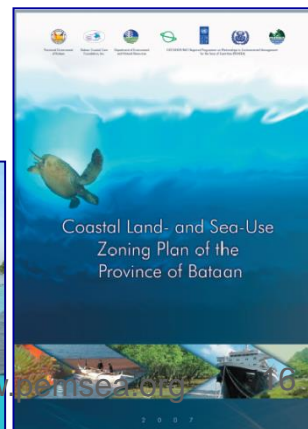
ICM core tools and methodologies



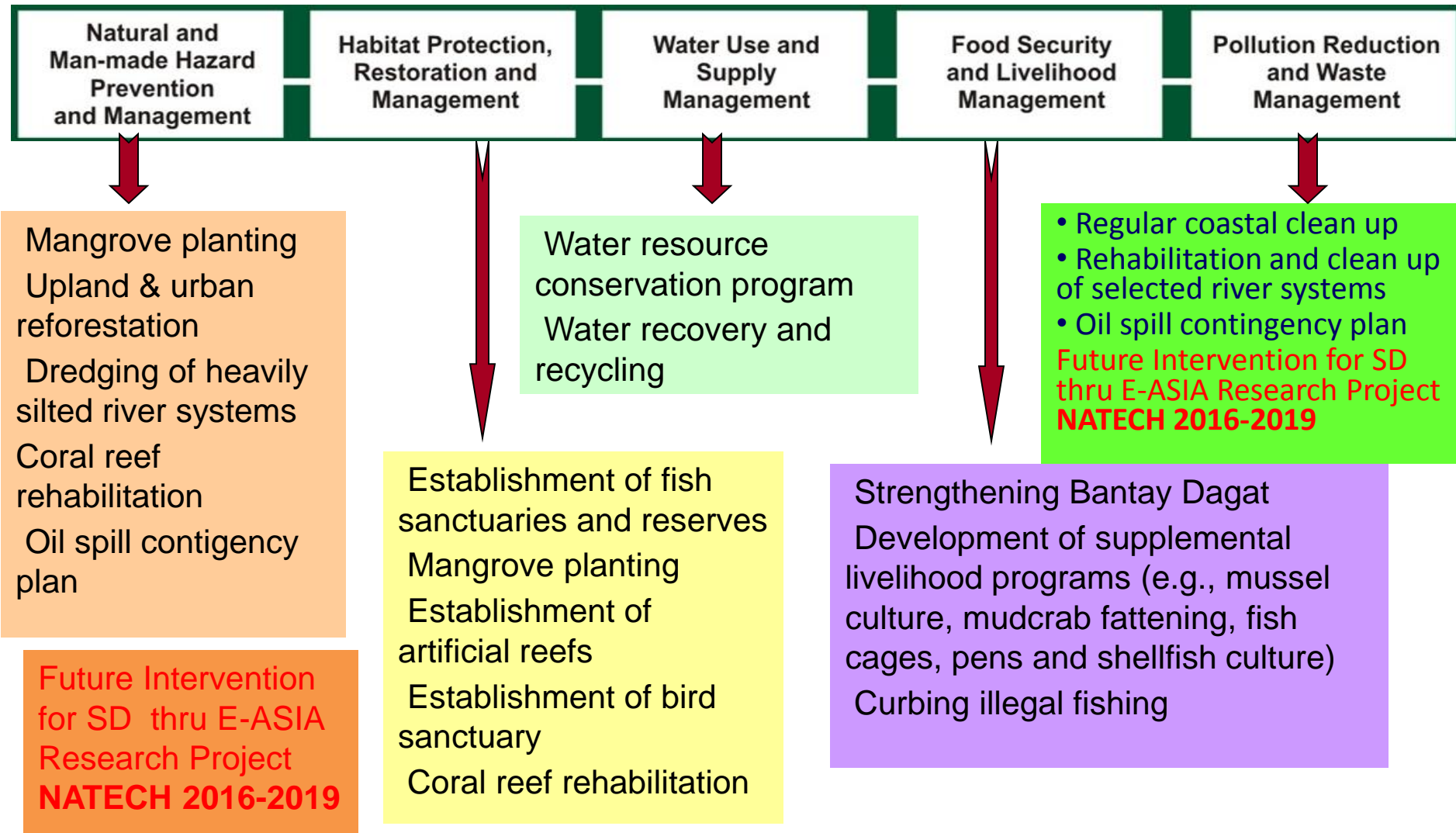
Bataan ICM Program - Governance Aspects



By 2020, Bataan province will be the preferred location for **Eco-Industrial Investments** leading to the Highest Human Development Index in the Philippines



Interventions to Address SD Aspects



Implementation of the Bataan Sustainable Development Strategy and Coastal Land and Sea Use Zoning Plan

Who participates in ICM

- Individuals, groups, organizations with:
 - Rights, interests or needs that may be affected by the management process (e.g., local communities, fisherfolks, fish traders, farmers, tourism operators, developers, industries)
 - Influence, authority or power relevant to the management process (e.g., elected officials, local, provincial and national government)
 - Expertise or resources relevant to the management exercise (e.g., government agencies, universities, international organizations, NGOs, donors, private sector)



Private Sector Support in ICM Program Implementation

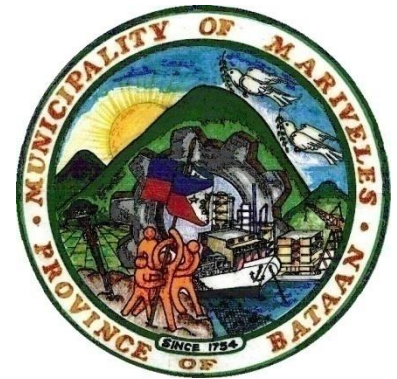
- ❑ Leadership and participation in the ICM program's coordinating committee/SD council
- ❑ Participation in consultations & planning leading to policy reforms
- ❑ Providing resources, skills, equipment & facilities in support of ICM program activities & events, including sponsorship of community-based projects
- ❑ Acting as a catalyst to increase awareness & promote community & corporate participation in coastal resources management



BCCFI Member Companies

About MAAP Location: Mariveles Municipality

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About MAAP Location: Brgy. Alas-asin

- ▶ early settlers of Alas-asin was once known as makers of fine salt hence its name was derived which means fine salt or ace of salt
- ▶ Majority of the barangay residents are migrants from nearby provinces like Cavite and Bulacan as well as from Visayan provinces & Mindanao
- ▶ Alas-asin is second biggest barangay of Mariveles with a land area of 2,369.3 ha.
- ▶ It is mountainous, being built along the slope of Mt. Mariveles. The highest peak of Mariveles, Mt. Tarak, is located in this barangay & famous for mountain climbing expedition.



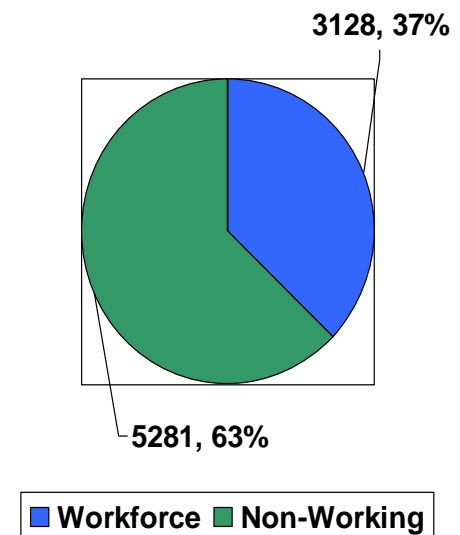
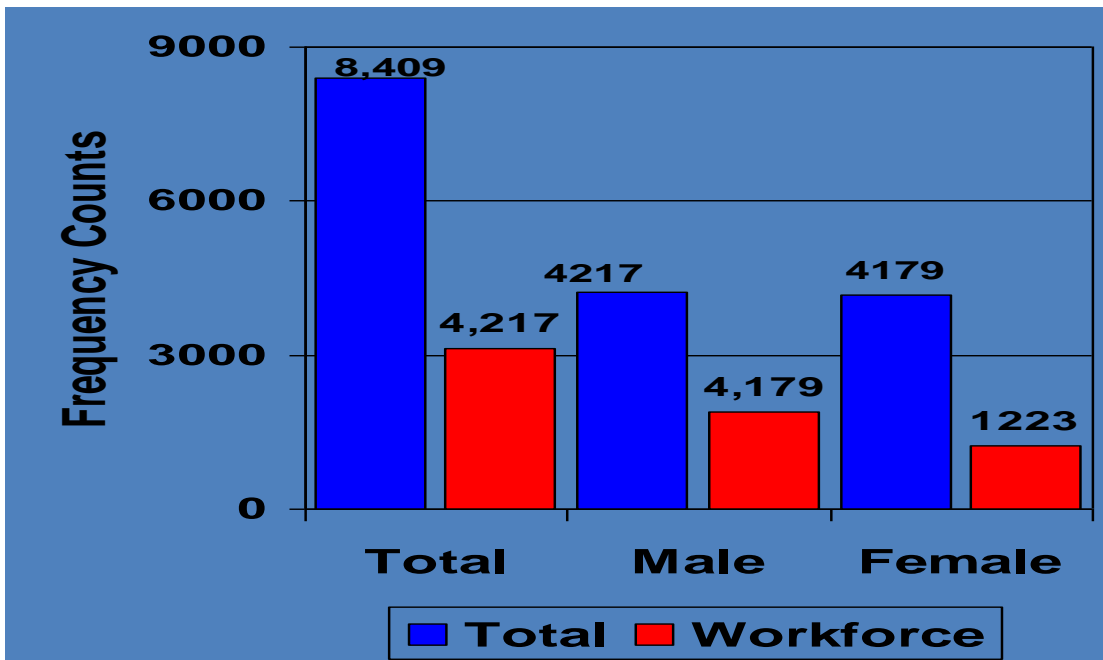
About MAAP Location: Brgy. Alas-asin

- ▶ Alas-asin coastal area is wholly rocky except in Dinginin & Marina which is sandy
- ▶ two-hours away from Manila & 45-mins. away from Balanga
- ▶ classified as industrial area & host of companies like Total, Liquigaz & MAAP
- ▶ Being an industrial barangay, it has an annual income of P4, 850, 483.83 with an IRA share of P1, 908,817.53, making it as the second highest income generating barangay of Mariveles.



Demography of Alas-asin

Population	Total	Male	Female
Household	1,884		
Average Household Size	4.5		
Total	8,409	4,217	4,179
Workforce	3,128	1,905	1,223



Health at Alas-asin

FACILITIES & ACCESSIBILITY

No of Barangay Health Center	3
No. Of Medical Health workers	
No. of Medical Service Vehicle	1
Mun. Health District	20 minutes away to Cabcaben
Arsenal Hospital	30 minutes away to Limay
Bataan General Hospital	45 minutes away to Balanga
Maheseco - Private hospital	20 minutes away to town proper

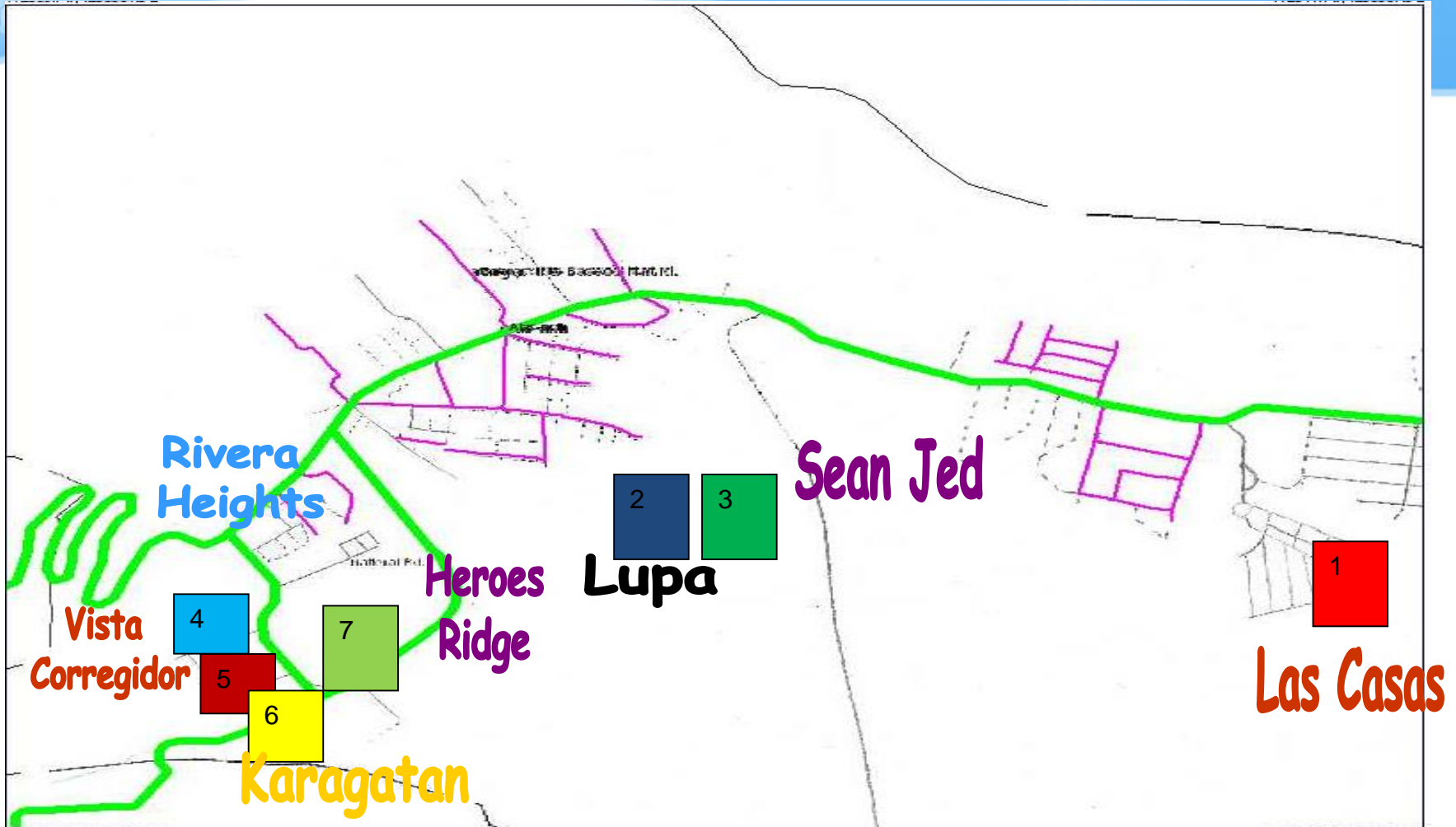
Health Services Output

	Total	Pct.
Child death 0-5 yrs old	7	1%
Pregnancy related death	1	0%
Malnutrition	12	1%

Education at Alas-asin

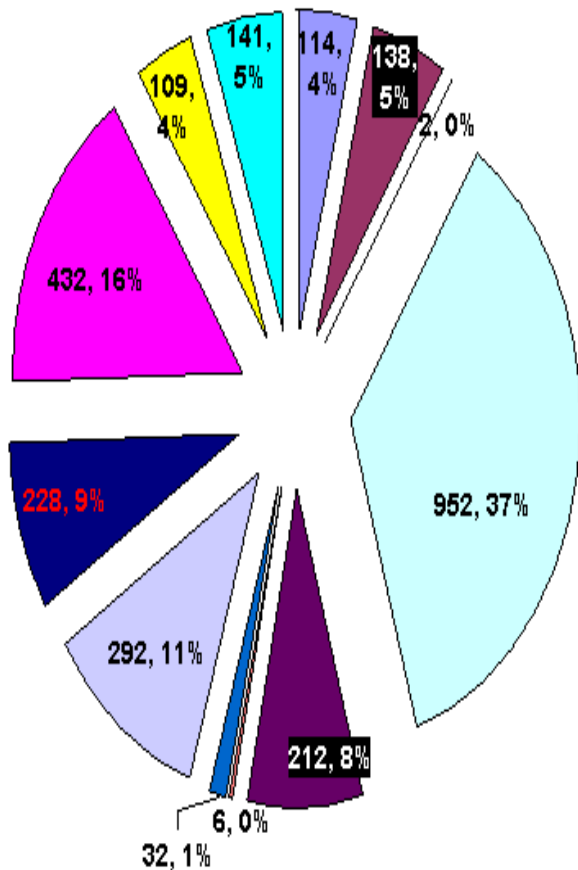
- ▶ 3 day care centers & 2 elementary schools
- ▶ Most children are studying in Alas-asin Elementary School located in the center of the barangay.
- ▶ Alas-asin Elementary School - constructed in 1979 & 5 school buildings with 18 rooms; headed by a principal with 16 teachers
- ▶ High school education at the Municipal High School in Cabcaben which is 10 minutes away from the barangay
- ▶ For college level, students can study in private or public schools in Mariveles (PUP-Mariveles Branch) & in Balanga city
- ▶ Qualified applicants can be accepted at MAAP within the barangay
- ▶ Vocational courses at the TESDA Vocational School
- ▶ 90% of the youth aging from 6 to 16 is getting at least basic education

Housing at Alas-asin



Business, Industry and Major Occupations at Alas-asin

Major Business Sector



<input type="checkbox"/> Agriculture
<input type="checkbox"/> Fishing
<input type="checkbox"/> Forestry
<input type="checkbox"/> Manufacturing
<input type="checkbox"/> Construction
<input type="checkbox"/> Mining & Quarrying
<input type="checkbox"/> Electricity, Gas and Water
<input type="checkbox"/> Wholesale/retail Trade
<input type="checkbox"/> Transportation, Storage & Communication
<input type="checkbox"/> Community, Social & Personal Service
<input type="checkbox"/> Finance, Insurance, Real Estate & Business Services
<input type="checkbox"/> Others NEC

Occupation	Total	Pct
Government officials/executives	78	3%
Professionals	121	5%
Technical and associates professional	108	4%
Clerical Jobs	74	3%
service, shop, market workers	435	16%
Agricultural Workers	231	9%
Trades workers	763	29%
Plant, machine operators	297	11%
Laborers and unskilled workers	291	11%
other occupations	264	10%
Total	2662	100%

Business, Industry & Major Occupations at Alas-asin

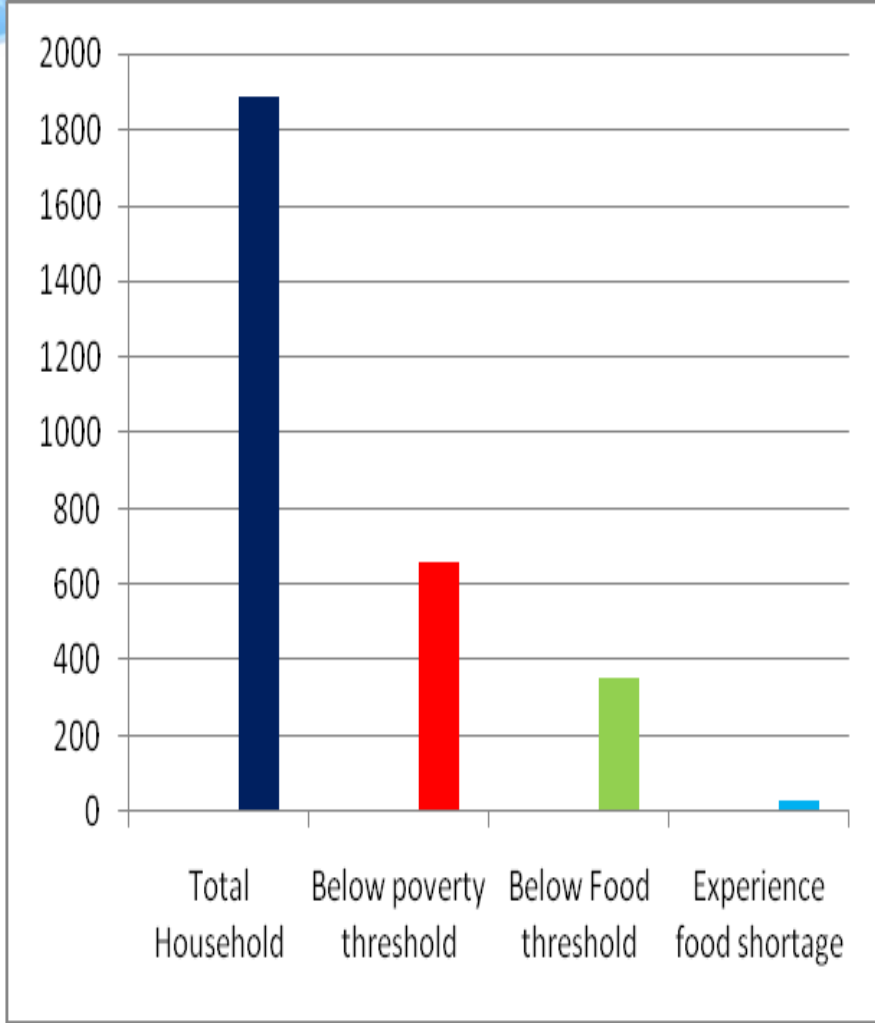
- ▶ 2 major companies: Liquigaz (LPG) & Total (Oil Company)

- ▶ MAAP

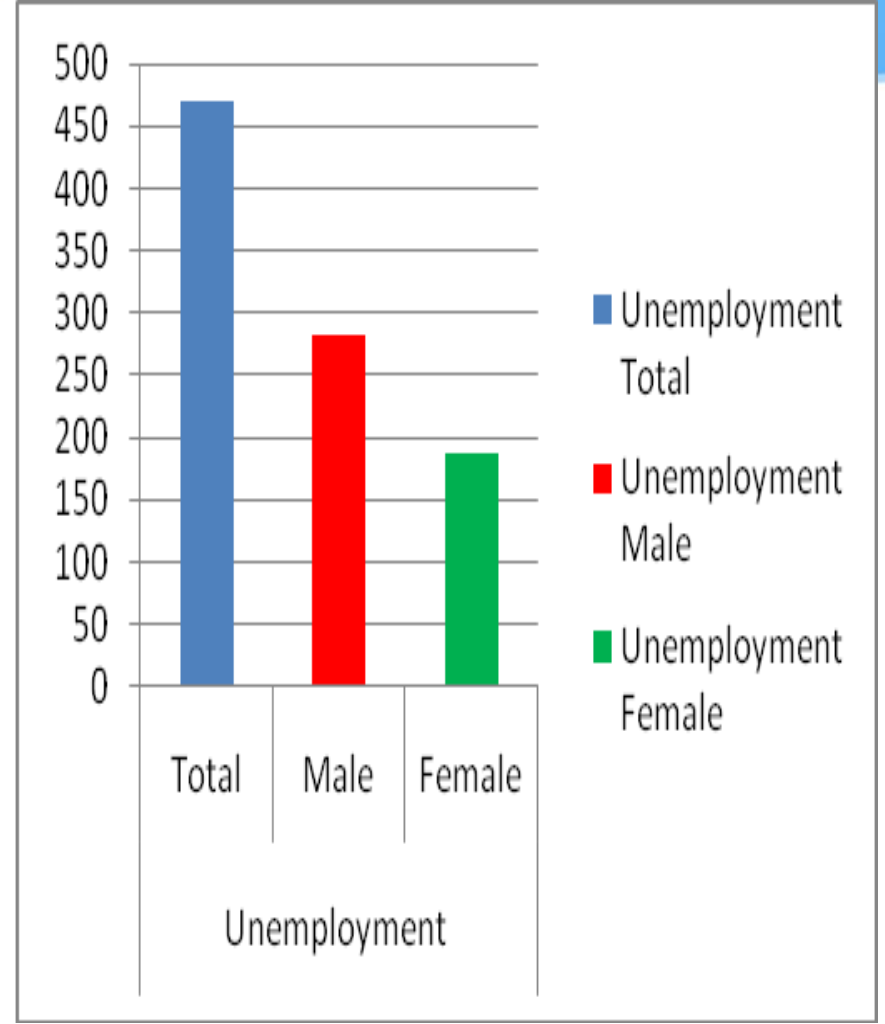


Business, Industry & Major Occupations at Alas-asin

Income & Livelihood



Unemployment Status



Water & Sanitation, Peace & Order and Social Organization at Alas-asin

- ▶ **Water and Sanitation**, 32% of the households in Brgy. Alas-asin have no access to safe water. 7% of all the households have no sanitary toilet.
- ▶ **Peace and Order** - Security Facilities & Accessibility of Alas asin have an organized system in securing the safety of the community. There are barangay tanod and lupong tagapamayapa appointed to safeguard the residents against crime and violence.
- ▶ The barangay has 2 patrol service vehicle and 3 tanod detachment
- ▶ Police visibility also is within 5 minutes away from the nearest detachment. Generally, Alas-asin is a peaceful community.
- ▶ On **Social Organization** - The Barangay Chairperson heads the barangay council with 7 councilmen heading different committees such as on environment, education, health and welfare, agriculture, and public works

ABOUT MAAP



- ◆ MAAP, is situated on a 125 hectare campus in Bataan Peninsula about 50 km. west-southwest of Philippine capital city, Manila, at $14^{\circ}26'42.04''\text{N}$ and $120^{\circ}32'58.79''\text{E}$
- ◆ Founded in January 1998, MAAP is a non-stock, non-profit academic institution established by the Associated Marine Officers' and Seamen's Union of the Philippines (AMOSUP), to ensure continues supply of competent marine deck and engine officers thru quality and full scholarship education (www.maap.edu.ph)
- ▶ **Vision.** MAAP envisions itself as a *leading institution of excellence* in the MET in the Asia-Pacific region and beyond
- ▶ **Mission.** MAAP provides **quality education and training** to midshipmen/trainees for the development of **competent seafarers** who shall possess the **character, knowledge, and skills** necessary for the successful pursuit of a **maritime career**.
- ▶ **Quality Policy.** We at MAAP commit to manage a maritime education and training environment that satisfies its clientele's requirements and achieves greater efficiency by continual system improvement.

MAAP Data on PRC Licensure Examination

The BSMT and BSMarE Course Programs

Class	Examinees	Passers	Passing Rate	AVERAGE
2003	BSMT 68	BSMT 60	88.24%	94.12%
	<u>BSMarE</u> 59	<u>BSMarE</u> 59	100%	
2004	BSMT 64	BSMT 62	96.88%	98.44%
	<u>BSMarE</u> 68	<u>BSMarE</u> 68	100%	
2005	BSMT 70	BSMT 67	95.71%	97.85%
	BSMarE 71	<u>BSMarE</u> 71	100%	
2006	BSMT 67	BSMT 65	97%	98.5%
	BSMarE 68	<u>BSMarE</u> 68	100%	
2007	BSMT 55	BSMT 54	98.18%	99.09%
	BSMarE 56	BSMarE 56	100%	
2008	BSMT 64	BSMT 61	95.31%	96.88%
	<u>BSMarE</u> 65	<u>BSMarE</u> 64	98.46%	
2009	BSMT 54	BSMT 52	96.3%	97.11%
	BSMarE 48	BSMarE 47	97.91%	
2010	BSMT 54	BSMT 51	94.44%	95.41%
	<u>BSMarE</u> 83	<u>BSMarE</u> 80	96.38%	
2011	BSMT 64	BSMT 60	93.75%	94.77%
	BSMarE 95	BSMarE 91	95.79%	

TOP MARITIME SCHOOLS IN THE PHILIPPINES

www.finduniversity.ph/philippine-universities-ranking/maritime (Year 2011 -2015)

Philippines Universities Ranking: Maritime

School	Weighted Ranking: Maritime	Ranked In
1 Maritime Academy of Asia and the Pacific <i>Mariveles, Bataan</i>	79.4%	6 exams
2 Palompon Institute of Technology - Palompon <i>Palompon, Leyte</i>	79.1%	4 exams
3 Technological Institute of the Philippines <i>Manila</i>	77.1%	4 exams
4 Lyceum of the Philippines University - Batangas <i>Batangas City, Batangas</i>	75.2%	5 exams
5 Philippine Merchant Marine Academy <i>San Narciso, Zambales</i>	74.9%	6 exams
6 Asian Institute Of Maritime Studies <i>Pasay</i>	71.2%	5 exams
7 Misamis Institute of Technology <i>Ozamiz City, Misamis Occidental</i>	66.3%	4 exams
8 John B. Lacson Foundation Maritime University - Molo <i>Iloilo City, Iloilo</i>	65.7%	5 exams
9 Baliuag Maritime Foundation <i>San Rafael, Bulacan</i>	53.3%	4 exams
10 PMI Colleges - Quezon City <i>Quezon City</i>	52.0%	5 exams

2014 Top 100 Colleges and Universities in the Philippines

<http://www.localpulse.net/education/2014-top-100-colleges-universities-philippines-967/>

- Philippines has a total of **2,080 higher education institutions**, according to 2010 statistics released by CHED
- According to the [Webometrics Ranking of World Universities](#), the rankings are based on the performance of universities from all over the world based on their **web presence and impact**.
- Vis a vis other Universities MAAP **ranked 28** in terms of : Presence , Impact, Openness and Excellence Rank

What is Extension?

- ▶ Extension is as an organized service designed to improve the living conditions of the surrounding community by teaching them to adopt better & developed methods & practices in their livelihood, environment, etc.
- ▶ It is a transfer of appropriate technologies, values, attitudes, knowledge & skills that will ultimately advance the social practice or lives of the clientele, partners, & cooperators.
- ▶ an extension program/project is a set of activities aimed to transfer knowledge or technology or to provide services to the community in consonance with the programs offered (CHED)



What is Extension?

- ✓ **CHED considers any or combination of the following extension/community services:**
 - ▶ Training programs - non-degree and non-credit courses
 - ▶ Technical assistance and advisory services – to agencies, organizations, associations and other groups
 - ▶ Communication/information services – dissemination of knowledge and skills to particular client groups through various means such as person-to-person contact, radio, tv, newspaper and other printed materials
 - ▶ Community outreach activities –conducted in areas outside the university/college, e.g. community-based social services, pilot projects, mobile clinic, etc.
 - ▶ Technology transfer, utilization and commercialization – the process of circulating, promoting, and marketing research outputs or technologies to potential users.

Rationale of Extension

- ▶ ***“every Maritime Higher Education Institution (MHEI) shall have extension services relevant to the maritime industry.”*** (CMOs 13 and 14, s.2013)
- ▶ ***“HEI’s to reinforce its role of service to society by undertaking activities aimed at eliminating poverty, intolerance, hunger, environmental degradation and disease for societal transformation.”*** [CMO 10, S. 1999]
- ▶ CMO 31, S. 1995: Policies in Voluntary Accreditation in Aid of Quality and Excellence in Higher Education.
 - ▶ ***“b.3.2. A highly visible community extension program. A description of the program (s), the nature and extent of student, faculty and staff involvement and other details shall be required documentation for this endeavor.”***
 - ▶ ***“b.3.6. Existence of working consortia or linkages with other schools and/or agencies. Documentary evidence shall include a description of the nature, mechanism, working agreements and other details of consortia.”***

Extension Vision

- ▶ Relevant quality extension services, more relevant & responsive non-formal education skills training courses utilizing the MAAP available expertise & facilities in coordination with other organizations who share the same concern in improving & uplifting the quality of life of the people in the Mariveles community.

Extension Mission

- ▶ To formulate and implement extension services geared toward improving the quality of life of the people relevant to the maritime industry in line with the mandate of CHED.

Extension Guiding Philosophy

- ▶ MAAP Extension Service Program -geared towards reaching out the community
- ▶ MAAP total system molds the midshipmen into a whole & achieving person.
- ▶ Faculty/staff shall encourage community outreach to students by leading the way a& setting examples of civic works & volunteer activities
- ▶ MAAP midshipmen participation or involvement in community service not only develop their character & articulate service but more so broaden their sense of responsibility which is necessary in their total development as professionals.

MAAP STATE OF THE COAST REPORT

- ❑ *Natural and Man-made hazard Prevention and Management (NATECH)*
- ❑ *Habitat Protection, Restoration and Management*
- ❑ *Water Use and Supply Management*
- ❑ *Food Security and Livelihood Management*
- ❑ *Pollution and Waste Management (NATECH)*



A. Natural & Man-made Hazard Prevention & Management

- ▶ Prepared to respond to various natural &/or man-made hazards
- ▶ proper preparation & mitigation measures can reduce the frequency of man-made hazards & severity of disasters
 - MAAP has a natural/man-made disaster/environmental emergency response plans
 - MAAP thru its safety officer has prepared a scope of the natural/man-made disaster/environmental emergency response plan (e.g. floods, earthquakes, fire)
 - MAAP has identified & developed mitigation strategies to reduce the risk associated & identified hazards
 - MAAP has a mechanism for implementing the emergency response plan
 - MAAP has identified trained & non-trained personnel assigned for the implementation of disaster response plans
 - MAAP has an early warning system in place
 - MAAP has a list of all available and adequate fully compliant equipment for implementing the disaster response plans. The same equipment are being used at the MAAP ASTC training center for Basic Safety Courses.

A. Natural & Man-made Hazard Prevention & Management

- ▶ Mariveles is considered as a flood & landslide prone area particularly when river channels from the mountainous areas overflow after heavy rains
- ▶ The high lying areas of MAAP saves it from severe flooding during rainy season, typhoons & during high tide of the bays & seas.
- ▶ MAAP developed the MAAP Disaster Risk Reduction & Management Plan (MAAP DRRMP) to respond to disasters & mitigate the impacts of disasters & calamities.
- ▶ MAAP DRRMP fulfills the requirement of RA 10121 (Disaster Risk Reduction Management Act).
- ▶ The plan covers the 4 thematic areas: Prevention & Mitigation, Preparedness, Response, Rehabilitation, & Recovery

A. Natural & Man-made Hazard Prevention & Management

▶ Disaster management

- ▶ aims to reduce or avoid the potential losses from hazards, assure prompt & appropriate assistance to victims of disaster, & achieve rapid and effective recovery
- ▶ cycle illustrates the on-going process by which governments, businesses, & civil society plan for & reduce the impact of disasters, react during & immediately following a disaster, & take steps to recover after a disaster has occurred
- ▶ Appropriate actions at all points in the cycle lead to greater preparedness, better warnings, reduced vulnerability or the prevention of disasters during the next iteration of the cycle. The complete disaster management cycle includes the shaping of public policies & plans that either modify the causes of disasters or mitigate their effects on people, property, & infrastructure.

MAAP Involvement in Community Disaster Risk Management

- ▶ Mitigation -minimizing the effects of disaster
E.g. building codes & zoning; vulnerability analyses; public education.
- ▶ Preparedness - planning how to respond
E.g.: preparedness plans; emergency exercises/training; warning systems.
- ▶ Response involves efforts to minimize the hazards created by a disaster.
E.g.: search & rescue; emergency relief
- ▶ Recovery - returning the community to normal.
E.g.: temporary housing; grants; medical care.
MAAP with its student manpower, in cooperation with AMOSUP has provided housing materials to the victims of super typhoon Yolanda. To date, MAAP alumni are raising funds for the victims of the Typhoon Lando at Nueva Ecija.



MAAP Involvement in Community Disaster Risk Management

Livelihood and Skills Assistance Programs

➤ Special Firefighting and Fire Prevention Training

aims to equip trainees with sufficient knowledge & skills to be of service to the community. This is also offered to non-government agencies working voluntarily for the welfare of the community.

➤ Emergency First Aid Training

designed to educate beneficiaries on various emergency procedures so that they can be able alleviate pain or suffering patients such as their students before seeking medical experts. This training can be free or subsidized.

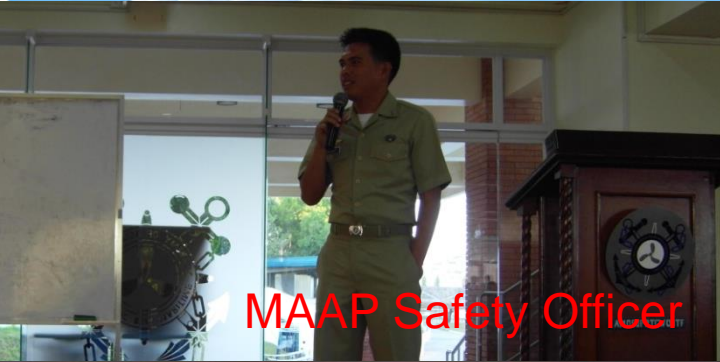
➤ Other Free Trainings

include the Helicopter Underwater Emergency Training which is usually benefitting personnel from the Philippine Navy, Philippine Coast Guard, and other government agencies.



MAAP Involvement in Community Disaster Risk Management

Fire Prevention Training by the Bureau of Fire Protection



MAAP Involvement in Community Disaster Risk Management

Community Outreach Programs

- Relief Operation for Typhoon Victims (2009)



- Relief Operation for Habagat Victims (2012)



- Relief Operation for Supertyphoon Yolanda Victims (2013)



MAAP Involvement in Community Disaster Risk Management

Bigay Puso Project

- charitable program wherein MAAP community together with its extension services partners provides gifts, foods & leisure for children during Christmas.



MAAP Involvement in Community Disaster Risk Management

- ▶ The MAAP Safety & Security Officer is responsible to see that the DRRMO works ,partners with other national agencies & NGOs to develop capabilities thru regular training & exercise which includes:
 - First Aid Training and competitions
 - Earthquake assessment
 - Earthquake and fire readiness and evacuation drills
 - Search and Rescue Operation



MAAP Involvement in Community Disaster Risk Management

Fire Drills



MAAP Involvement in Community Disaster Risk Management

Environmental Care Extension Services Programs

- Coastal Clean-up Drives



MAAP Involvement in Community Disaster Risk Management

Participation in the Earth Day Celebration



MAAP Involvement in Community Disaster Risk Management

Environmental Care Extension Services Programs

- Information Drive, Seminars, and Trainings



- Clean Up Activities



B. Habitat Protection, Restoration and Management

- ▶ Coastal habitats served as critical-life support systems for a multitude of aquatic living resources.
- ▶ The quality of these habitats must be maintained and improved to sustain their benefits.
- ▶ Establishment of an **artificial reef** had been part of MAAP's project in partnership with TOTAL , LIQUIGAS , BCCFI and PMO Bataan to ensure the protection of these habitats.



- Artificial Reef Project



C. Water Use and Supply Management

- ▶ MAAP has water conservation & management plan. MAAP provides full support to EO 26 declaring the implementation of the **National Greening Program** as a government priority program to reduce poverty, promote food security, environmental stability & biodiversity conservation to enhance climate change mitigation & adaptation.
- ▶ MAAP planted thousands of seedlings in its 103-ha campus for the past 16 years from 1999 to date.
- ▶ MAAP in 1999, had constructed public toilet and ground water through wells. MAAP water supply both in the campus and housing facility have their respective water supply systems.



MAAP Greening Program

Environmental Care Extension Services Programs

- Tree Planting Activities



D. Food Security and Livelihood Management

- ▶ Fish is a direct product of the coastal zone, providing both food & livelihood to coastal dwellers, & to consumers far from the coast.
- ▶ Fisheries management is a challenging & necessary aspect of managing marine & coastal resources in order to ensure the sustainability of this valuable natural asset. A management strategy, supported by adequate resources & equipment, are markers of local government towards managing this resource.

- ▶ MAAP has established a SAMAMABA, Fishermen community & they were trained on **strategic planning** and **payao management in 2008**.



D. Food Security and Livelihood Management

▶ Effective coastal resource management plan hopes to gain local community support to sustainable municipal fisheries development through their active participation on issues identification and prioritization as well as generating suggested solutions & long term commitment to be partner in fishery development.

▶ Nutrition status is an indicator that integrates availability & equitability of access to food and livelihood. While other factors (such as agriculture and trade) may affect these figures, nutrition status is also affected by the availability of seafood.

Health and Sanitation Programs

- Bloodletting



Health and Sanitation Programs

▶ Feeding Program

- Feeding program aims to feed identified malnourished and indigent pupils of Alas-asin Elementary School and Marina Elementary and Day Care Center.
- This is to improve the nutritional status of selected undernourished school children; increase alertness and participation in the class activity, thereby increasing learning capacity; alleviate short-term hunger in malnourished or otherwise well-nourished school children, and; motivate parents to enroll their children in school and have them attend regularly.



D. Food Security and Livelihood Management

Education, Training & Value Formation Program

► “Read Aloud” Advocacy Program



D. Food Security and Livelihood Management

▶ **MAAP Livelihood programs** help optimize productivity of coastal areas and help households maximize their potential for income.



D. Food Security and Livelihood Management

- ▶ On Sept 16-18, 2015, funded by NRCP/DOST, MAAP in partnership with NRCP, DepEd and St Francis Xavier Parish Church conducted a **Health & Nutrition Livelihood project for the Indigenous People (IP- aeta)of Bataan**
- ▶ The Aeta were taught simple nutritious recipes, using vegetables found on their backgrounds for their meals or for them to sell in their community as their means of livelihood.

Seminar for indigenous Aeta Community *“Ways of Cooking Healthy and Nutritious Foods”*



D. Food Security and Livelihood Management

► Education, Training & Value Formation Program

With MAAP in Bataan, hundreds from Bataan were able to **avail scholarships and free trainings**. In terms of employment, priority is given to Bataan residents provided that they comply with MAAP requirements.



Education, Training & Value Formation Program

► Book Donation Program



D. Food Security and Livelihood Management

▶ **MAAP Subsidized Training Program**

- Subsidized Training Fees - given to organizations such maritime schools or training centers, GOs and NGOs and other agencies which are MAAP's partners in its various endeavors such as in promoting quality MET and goodwill in the community.
- MAAP Basic Safety Course, Firefighting, and other seafaring courses
- MAAP Extension Service Training Program provides assistance to other maritime schools, training centers, and other agencies through provision of trainings, lectures, seminar-workshop, and paper presentations upon their requests.
- MAAP Research Paper Review Program - peer review of research papers of other HEIs, organizations, and other research linkages. This promotes research and extension network of MAAP with other institutions.

E. Pollution and Waste Management

- ▶ MAAP has specific strategies and action plans essential to address issues on pollution & waste management.
- ▶ MAAP has sanitation facilities for human well-being with positive impacts on the quality of the environment in meeting one of the MDG targets for environmental sustainability.
- ▶ **MAAP ensures** controlled waste handling and disposal for human & ecological health as well as the aesthetic & recreational values of coastal areas.
- ▶ Solid waste management is a major challenge at MAAP-reduction, reuse, collection, transport, transformation (treatment) & disposal.
- ▶ MAAP has been implementing measures to minimize the problem on solid waste disposal.



F. Other Contributions of MAAP

▶ As a scholarly institution, MAAP contributes in environmental awareness thru paper presentation & publications wherein MAAP initiatives in partnership with the Province of Bataan & other external agencies like PMO, BCCFI, PEMSEA DENR, PENRO, DOST, NRCP, both in local & international have been documented for others to emulate. Some of these have been presented and/or published. Some of the documented coastal & environment protection outcomes by MAAP from 2008 to 2015 are listed below:

- Baylon, AMB and EMRS Santos (Nov 12-15, 2008) “ ***The Artificial Reef Project : Sharing of Resources for Coastal Environmental Protection***” - 7th AMFUF Annual Conference with the theme “*Sharing of Resources among Fisheries Institutions*”, Myanmar
- MAAP hosted the 2-day Bataan Integrated Coastal Management Program (BICMP) planning workshop 2008 in its campus with PMO & BCCFI officers and members.

F. Other Contributions of MAAP

- MAAP, the only educational private institution member of BCCFI, contributed in the preparation of the two publications:
 - 1) ***The Bataan Sustainable Development***
 - 2) ***The Bataan Strategy Coastal Plan and Sea-use Zoning Plan***
- November 4, 2009, Bataan is one of the awardees of the ICMP local implementation and good practices. **Bataan is also the first province to accomplish and adopt a Coastal Plan and Sea-use Zoning Plan**
- Nov 22, 2009, Dr. Baylon on behalf of MAAP & BCCFI presented a paper entitled “***Addressing Climate Change in the Bataan Province and Manila Bay Through Private – public partnership: The BCCFI Experience***”, - 9th South East Asian Congress, “*Participatory & Partnership for Coastal Environmental Protection and Management*”, at PICC, Manila

F. Other Contributions of MAAP

- Baylon & Santos (April 2010) - 14-page paper "***Participatory & Partnership Approach for Coastal Environmental Protection & Management : The MAAP Experience***" presented at Region 3 CHED San Fernando Pampanga, Philippines
- Baylon & Santos (Oct 13-15, 2011) "***Coastal Management in Addressing Climate Changes Through Private (BCCFI)-Public (LGUs) partnership in the Province of Bataan: The BCCFI Socio-Economic Investment Survey Result***" 10th AMFUF Proceedings published by Korea Maritime University pp 1-11 & also presented in Korea
- Baylon & Santos (2012) ***Viable Solutions in Addressing Climate Changes thru Private (BCCFI) –Public (LGU) Partnerships in the Province of Bataan: A Case Study*** ASIAN Vol. 1 January 2012
International Peer Reviewed Journal IAMURE: International Journal of Ecology and Conservation p18- 34 (ISSN-2244-1573) and online (ISSN 224-1281) Vol 1 Jan 2012

F. Other Contributions of MAAP

- Baylon & Santos (October 24-25, 2013) - “ ***Recent Developments on Ocean Engineering & Ocean Resource Development in the Philippines***” at Session 401: Frontier of Coastal and Ocean Engineering & Ocean Resource Development during the Frontier Industrial Forum 2013 with Theme “*Push Emerging Economy Forward New Tri-Conference*”, Qingdao China
- Baylon & Santos (September 4, 2013) “***Introducing GIS to AMFUF: MAAP contribution for an Efficient and Safe usage of Pacific Ocean thru the Maritime Workforce Technical Competence Development***” 12th AMFUF Proceedings published by KMOU and presented at 12th AMFUF, FESTFU, Russia
- Baylon & Santos (April 2-6, 2014) “ ***Mainstreaming Youth Skills Development Agenda in Extension Services Program for Disaster Preparedness: MAAP and the PAEPI Case Study***, St Paul University Quezon City during the International Conference for Youth Forum Looking Beyond Disaster (LBBD4) as speaker for MAAP and PAEPI
- PAEPI (MAAP is a member) - one of the 48 Philippine member of **Global Network of Civil Society Organizations for Disaster Reduction** (400 org’s from **48 countries**)

F. Other Contributions of MAAP

- Baylon & Santos (Aug 21-28, 2014), ***“MAAP Corporate Social Responsibility: Participatory and Partnership Approach on Environmental Protection through Management and Extension”*** at 9th International Youth Peace Ambassador Training Workshop (YPA9) on Community Service, Applied Research & Extension Studies, Salt River Pima-Maricopa Indian Community (SRPMIC), **Arizona USA**
- (Sept 4, 2014), on invitation by Nippon Care Institute in Tokyo, Japan Dr. Baylon presented ***MAAP initiatives and that of the Province of Bataan on disaster preparedness particularly the Command Incident***. The Bataan Disaster Preparedness Management Council & Office (**PMO Engr Ric Yuzon and Engr. Carlos De La Fuente**) were gratefully acknowledged for the information & data they have provided which was presented in Japan & had promoted Bataan for its readiness in times of calamities which Nippon Care Fit would like to emulate and be trained in the Philippines.

F. Other Contributions of MAAP

- Baylon & Santos (October, 2014), presented ***MAAP & PAEPI Best Practices on Renewable Energy*** in partnership with Bataan, DOST, DOE and TREEDC, in **Technological Tennessee University USA**
- Bit Conference World Ocean Congress (WCO-2015), Nov. 6-9, 2015
Hilton Golden Beach Hotel, Qingdao, China
 1. presented “ ***Protecting Ocean Coastlines Thru Mangroves : Its Status & the MAAP Contribution*** ” by Dr Baylon, Vadm Santos & Engr Alex Baluyot
 2. presented “ ***Geo-hazard Assessment (Rain Induced Landslides & Flooding in Region 3 Philippines: MAAP Preparation in Disaster Risk Management)*** ” by Dr Angelica Baylon, Vadm Eduardo Ma R. Santos , AFP (Ret) and Engr. Noel Lacadin

<http://www.bitcongress.com/wco2015/scientificprogram.asp> and
<http://www.bitcongress.com/wco2015/programcommittee.asp>

F. Other Contributions of MAAP

- Baylon & Santos (October, 2014), ***MAAP and PAEPI Best Practices on Renewable Energy*** in partnership with Bataan, DOST, DOE and TREEDC, Tennessee USA
- Bit Conference World Ocean Congress (WCO-2015), Nov. 2-9, 2015
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<http://www.bitcongress.com/wco2015/scientificprogram.asp> and
<http://www.bitcongress.com/wco2015/programcommittee.asp>

G. Future Contributions of MAAP (As Philippine Research Leader for E-Asia JRP – Implication for NATECH 2016)

1ST YEAR (April 2016 – March 2017)

- ▶ The Philippine research team will provide support to the project by facilitating contacts & interviews with industry in the Bataan coastal industrial estates, & government officials. E.g. TOTAL, Liquigas, Petron & other industries that use or handle hazardous materials.
- ▶ Conduct field visits & apply the industrial survey to industrial facilities in Bataan to understand the situation regarding practices
- ▶ Questionnaire covers common resource management (roads, sewers, utilities, communications, warning systems), responsibilities, "*desire/ willingness to Work With Neighboring facilities*" to develop early warning systems &/or prevention & emergency response
- ▶ Interviews with public institutions for chemical accident prevention (regulators, inspectors) & those in charge of natural disaster risk management/ emergency response & recovery (e.g. civil protection, fire department officials) & early warning (e.g. flood warning systems, tsunami warning, & dissemination of information, etc.) will be arranged

Implications for NATECH 2016

2nd YEAR (April 2017 – March 2018)

- ▶ MAAP, in partnership with provincial government through Project Management Office (PMO) of Bataan Integrated Coastal Management Program (BICMP), DOST, NRCP, private sector partners, Bataan Coastal Care Foundation (BCCFI)&PEMSEA, will host workshops to:
 - ▶ identify critical scenarios, (high impact high frequency to high impact low frequency)
 - ▶ identify & map players and stakeholders involved in the risk management process
 - ▶ determine areas where mainstreaming of plans/programs of local government & the industry on DRRM as appropriate can be undertaken in alignment with the National DRRM framework as stipulated in the DRRM Act of the Philippines (RA 10121).



Partnerships in
Environmental Management
for the Seas of East Asia

PHILIPPINE SIDE

3rd YEAR (April 2018 – March 2019)

- ▶ MAAP together with other member companies of BCCFI & PEMSEA, PMO & DRR organizations at the regional & local government levels, as appropriate, will analyze possible barriers/ countermeasures (both hard & soft) for risk reduction at the source &/ or to mitigate in case of accidents, & their consequent impact on reduction of risk.
- ▶ Based on lessons learned from others best practices, MAAP will prepare guidelines for area wide comprehensive risk management at industrial parks.
- ▶ A consultative workshop involving the industrial estates will be conducted to seek inputs & comments on the draft guidelines, including mechanisms for adoption & implementation.

REFERENCES

- ▶ Baylon & Santos (October, 2014), ***MAAP & PAEPI Best Practices on Renewable Energy*** in partnership with Bataan, DOST, DOE and TREEDC, **Tennessee USA**
- ▶ MAAP Department of Research & Extension Services post activity Reports Year 2004-2014
- ▶ MAAP External Relations Department post activity Report 2014-2015
- ▶ MAAP President Accomplishment Report 2004-2014
- ▶ Mariveles Municipality Development Office (MPDO) for the Statistical Data of the barangay Alas-asin
- ▶ Environmental health in emergencies and disasters: A practical guide. WHO, 2002. Disaster Help, US Department of Homeland Security.
- ▶ Green Paper on Disaster Management, Department of Provincial and Local Government, South Africa

CONCLUDING REMARKS

- ICM is practical platform for implementing private/corporate sector social responsibility initiatives, as it enables the private sector to identify & contribute to social, economic & ecological objectives that are highly relevant to their respective businesses & the communities in which they operate
- Innovative public-private partnership arrangements among national agencies, local governments, communities & the corporate sector enhances marine & coastal governance through shared values, responsibilities & investments among the partners
- The Bataan ICM program is one good example that showcases the effective partnership among various stakeholders in the Province ,wherein MAAP is actively involved
- The Philippine participation in NATECH 2016 (led by Prof Naomi Kato) and the E-Asia Joint Research project (led by Prof Ana Maria Cruz) through MAAP and its partners would further enhance the ICM program and best practices in the Philippines. The same shall be documented and shared with gratitude to Japan (NATECH team) for having conceptualized and led the project with Philippines as member of the Asian team.

END OF PRESENTATION



THANK YOU VERY MUCH

