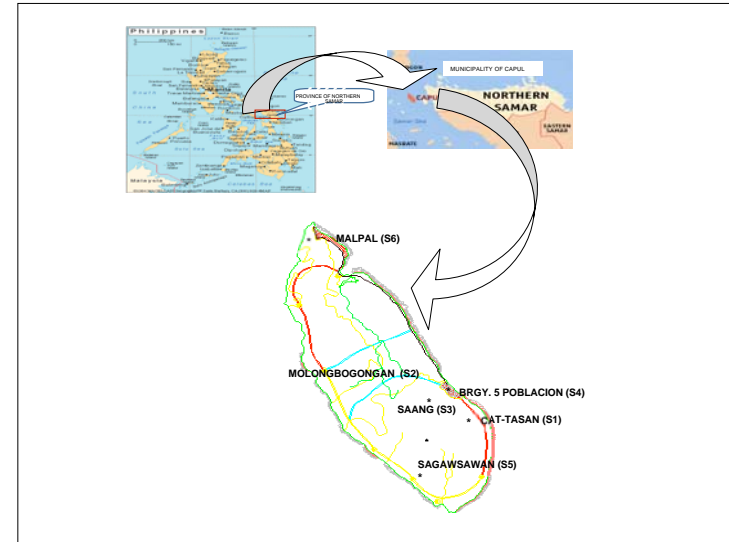


Livelihood Strategy and Conservation in Small-Island Ecosystem in Capul, Northern Samar, Philippines

Tito M. Cabili



Why Capul?

- The researcher is a native of the place.
- Unique language
- Unique geographic location
- Regular occurrence of disturbances
(Capul is under Type II climate, in 12 years PAGASA recorded 28 tropical cyclones)
- Information about small-islands is scarce.

Objectives of the Study

1. **describe the social and biophysical environments of the island;**
2. **analyze the livelihood strategy of the local people in terms of:**
 - natural assets
 - human assets
 - physical assets
 - social assets
 - financial assets

Objectives cont...

3. **determine the effects of the livelihood strategy on the conservation of the island ecosystem through:**
- **the quantity and quality of runoff and sediment load**
 - **seagrass diversity and net primary productivity (NPP)**
 - **mollusk species diversity**
 - **fish productivity**

Scope and Limitation

Scope

- Livelihood strategy
- Influence of livelihood strategy on the island ecosystem were through:
 - runoff and sediment measurement
 - seagrass community
 - mollusk species diversity
 - fish productivity

Limitation

- only on the combined farming, fishing and gathering of shellfish.
- only in coconut-based farms.
- corn and rice fields are excluded.
- species diversity, above ground biomass only.
- biomass only.

Conceptual Framework

Concepts:

Small-island –is a self-contained human system or self-contained society (Royle 2001)

- it shows complex web relationships of all living forms and non-living components interacting with each other (SSRF, Primer 1995).

Conceptual cont...

Livelihood strategy- an activity undertaken by households to provide a means of living and ensure economic and social security (Curry and Gibson 2001).

-is dependent on the natural, human, physical, social and financial assets of the household or community.

-this may either lead to environmental conservation or degradation.

Conceptual ...cont...

Livelihood is environmentally sustainable when:

- it maintains or enhances its assets
- it has beneficial effects on other livelihoods
- not undermining natural assets.

Livelihood is socially sustainable when:

- it can cope and recover natural perturbations and other external influences.
- provide livelihood security for generations.

Methodology

Direct observation – data on the present
biophysical environment of the island.

- landmarks and infrastructure.

Unstructured interview – on the assets of
livelihood.

Focused group discussion- 5-10 persons only.

Secondary data – fill data gaps of the primary
information gathered.

Indicators of the status of the island

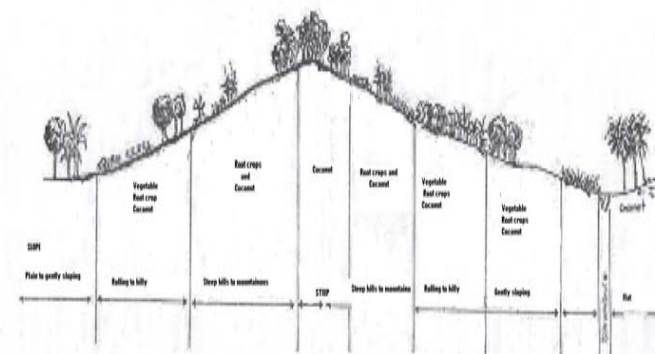
Collection and analysis of runoff water and sediment load correlated with land use - from January to December 2007. Improvised catch basins were placed in six sites.

Seagrass community-species diversity and NPP (down the catch basins)

Mollusks-species diversity (1 barangay only)

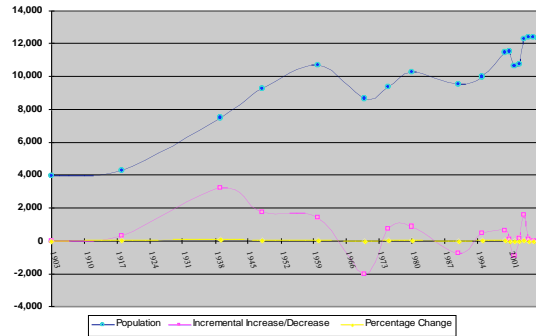
Fish Productivity-10 buying stations (whole town)

Abaknons' cropping pattern

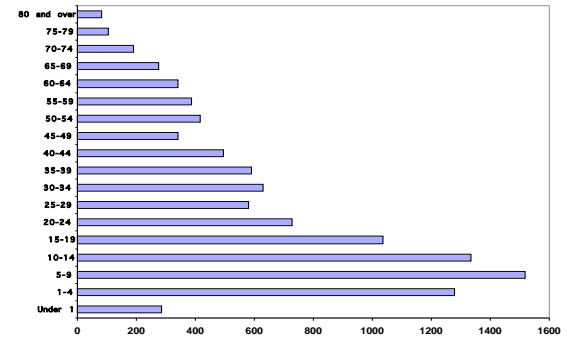


Social characteristics of the island

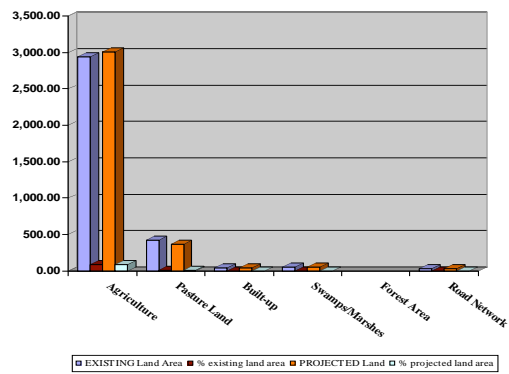
Historical Population growth



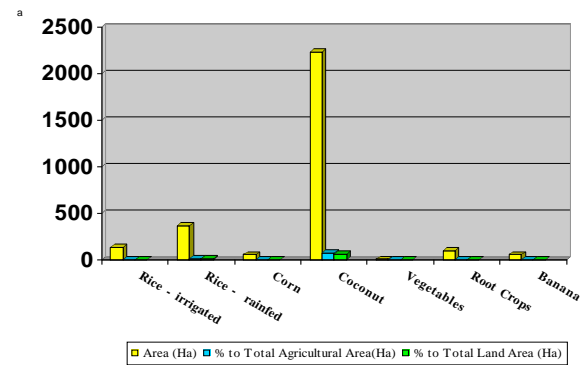
Age structure



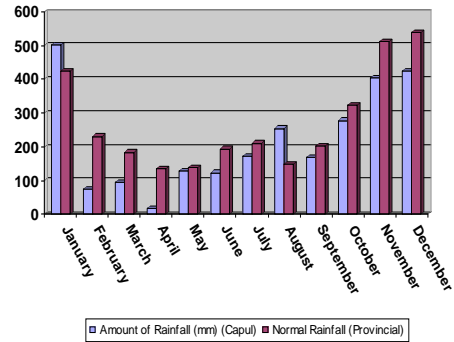
General land use



Breakdown of Agricultural Area



Rainfall distribution



Physical assets:

Farming

- *Sundang* (pointed sharp bolo) for clearing
- *Bando* (not so sharp bolo) for cultivation and weeding
- *Palahos* and *piko* for making hills
- *Totok* for getting camote tubers
- Plow usually for rice cultivation

These simple, practical, hand farm tools have less negative effects on the environment.

Physical assets

- *Pamangaraw*
 - Lago'lo'
 - Rambo
 - Kitang
- *Pamana*
- Trap fishing
 - Timing-timing
 - Taklob
 - Bobo
- Net fishing
 - Pokot, tagata, dala and pamurugkas
 - Sudsod



Shellfish gathering tools
- Kaw'ot, Panlugit

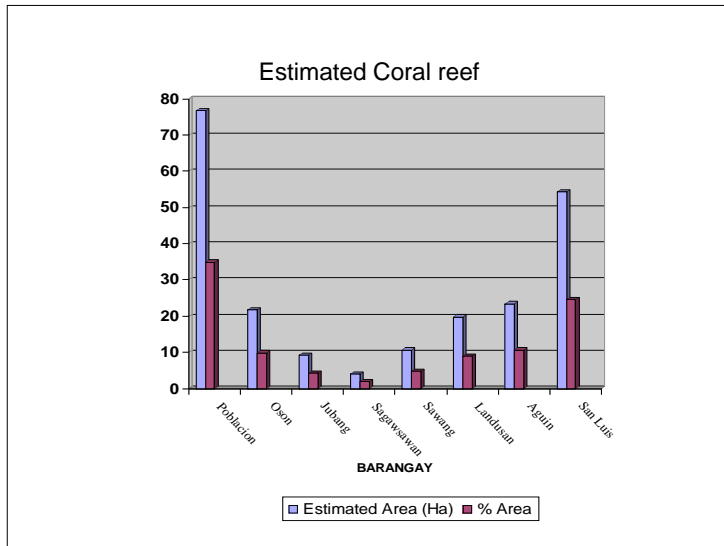
Pag-agon

Abaknon's ingenuity - design of cheap, practical and environment friendly fishing gears

Landmarks

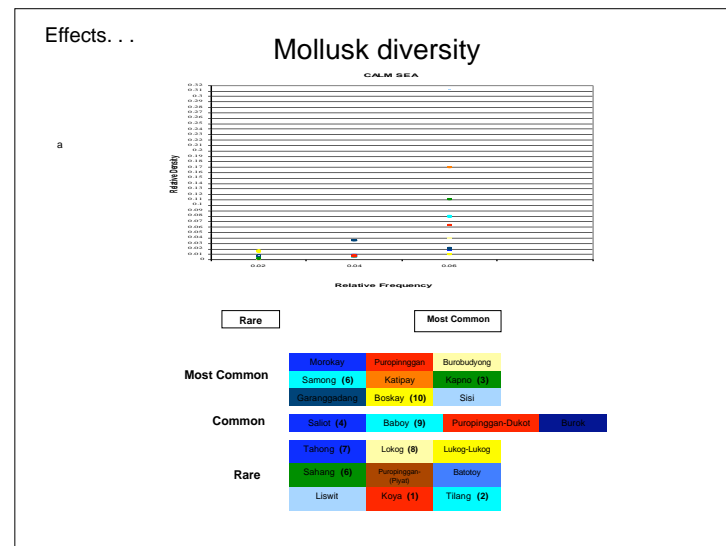
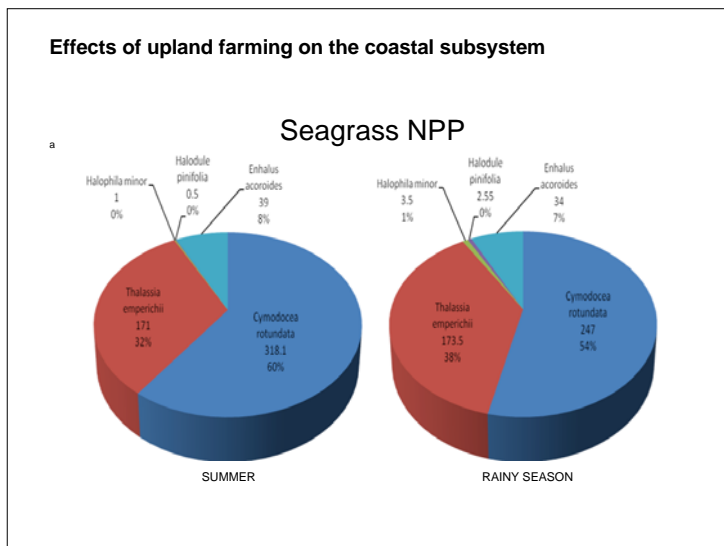


People's intense observation and interpretation of the natural environment lead to beliefs - that served as avenues for conserving resources



Effect of upland farming on the coastal subsystem: Rate of erosion

SITE	VEGETATION COVER	PRESENT STUDY			PREVIOUS STUDIES	
		SLOPE (%)	MEAN ANNUAL RUNOFF (MM/HA)	MEAN ANNUAL SEDIMENT LOAD (T/HA/YR)	RATE OF EROSION	SOURCE OF INFORMATION
Site 1 (S1)	Coconut with grass and shrubs as understorey vegetation cover	49.89	350	0.024	100 t/ha/yr (grassland)	1982. BED Report cited by Cruz, 1986, Cuevas, 1992
Site 2 (S2)	Coconut intercropped with vegetable crops	51.33	516	0.107	27.0 t/ha/yr (new kaingin)	Ke l i m a n , 1969 cited by Cuevas, 1991
Site 3 (S3)	Coconut intercropped with root crops	43.00	300	0.030	489 t/ha in 6 mos. (sweet potato)	Siebert, 1987 cited by Cuevas, 1991
Site 4 (S4)	Urban center of the island. Most of the area is cemented	7.00	1,176,513	0.019		
Site 5 (S5)	Barangay in which gathering of shellfish is the major livelihood. Boulders of rocks, grasses and shrubs are found in the area	42.00	299	0.009	39.7 t/ha/yr (reforested agriculture)	White, 1988 cited in http://www.fao.org/docrep/w2508e/w2508e05.htm
Site 6 (S6)	Control/traditional site. Coconut with wild trees, shrubs, and grasses. Activities centered on coconut farming with minimal crop cultivation	53.89	483	0.014	0.09 t/ha/yr (primary forest)	Ke l i m a n , 1969 cited by Cuevas, 1991

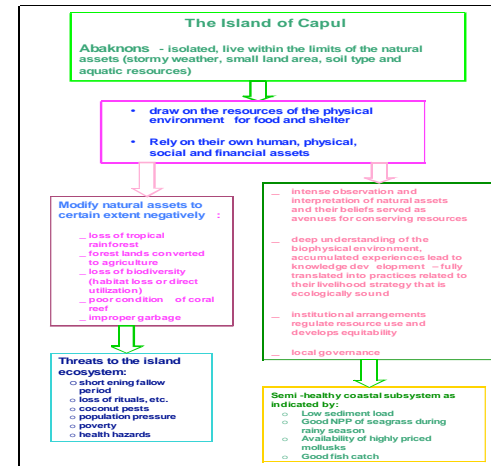


Effects . . .

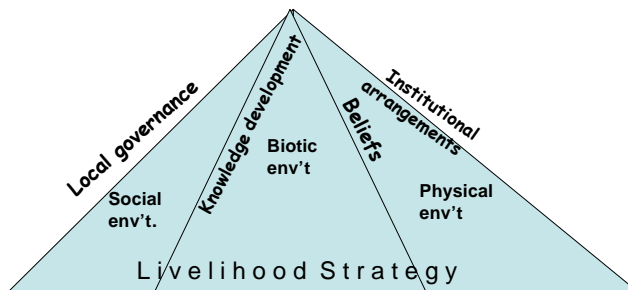
Fish productivity

STATION	NO. OF FISH BRGYS. AND SITIOS COVERED	VOLUME OF FISH CATCH (KG IN 28 DAYS)		ANNUAL VOLUME OF FISH CATCH (IN KG/STATION)	APPROXIMATE VALUE (P/PP/KG)	ANNUAL VALUE (P/PP/STATION)	WHERE CONSUMED
		CALM	ROUGH				
Poblacion	5 Brgys., 6 Sitios	2,262	600	4,957	85.00	412,337	Within Poblacion
San Luis	1 Brgy., 3 Sitios	1,225	382	9,643	70.00	675,024	San Luis and Poblacion
Bel-at	1 Sitio	122	142	1,579	70.00	110,502	Bel-at and Poblacion
Aguin	1 Brgy.	533	252	4,710	70.00	329,700	Aguin and Poblacion
Landusan	1 Brgy.	861	547	8,449	70.00	591,444	Landusan and Poblacion
Tugsaban	2 Sitios	1,500	744	13,466	70.00	942,606	Tugsaban, Pob., and Allen, N. Samar
Sawang	1 Brgy., 3 Sitios	673	1,324	11,983	60.00	718,992	Sawang, Pob. Allen, N. Samara, Matnog, Sorsogon
Sagawsawan	1 Brgy.	94	444	3,231	60.00	193,860	Sagawsawan, Pob. Allen, N. Samar
Juhang	1 Brgy.	724	387	6,667	60.00	400,032	Juhang, Pob., Allen, N. Samar
Oson	1 Brgy., 2 Sitios	870	15,303	97,038	70.00	6,792,660	Oson, Pob., Allen, N. Samara, Matnog, Sorsogon
Total value for the whole island		8,864	20,126	173,935		11,167,157.00	

Discussion



Conclusion



Pillars in the conservation of island resources

Recommendations

Further strengthening of local governance specifically programs/ordinances that will address the ff:

- sanitation – provision of proper sewerage disposal – construction of toilets in every house; that will not affect water system of the island-ground water as well as sea water;
- implementation of RA 9003
- campaign for eradication of illiteracy
- conservation of landmarks; and
- strengthening culture and tradition

In closing i say. . .

Mahaya selamat si kaam dimuan

ngan mahalap kuhap.