State of the Mangroves in
ILOCOS SUR

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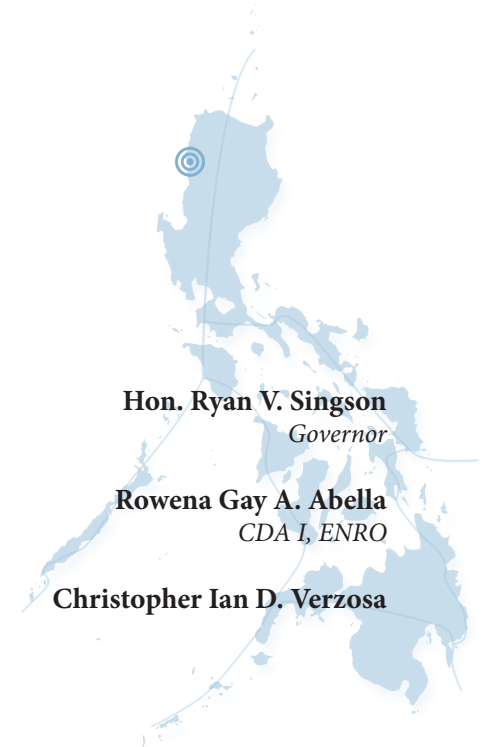*Governor*

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I. INTRODUCTION

The province of Ilocos Sur is centrally located in Region I with Vigan City as the capital. It is bounded in the north by the province of Ilocos Norte, in the south by the province of La Union, in the east by the province of Abra, Mountain Province and Benguet, and in the west by the West Philippine Sea. It has a total population of 665,575 (NSO 2010) and a total land area of 257,965 ha (DENR-Land Management Service 2010), composed of 34 municipalities. Sixteen municipalities and two cities comprised of 118 barangays are situated along the coast (**Appendix G**). The province has a total shoreline length of 157.626 km. The total coastal area is 47,286 ha with 131,426 inhabitants (NSO 2010).

The primary sources of income of the coastal residents are fishing, farming, aquaculture and livestock production. The social problems encountered by the coastal residents are illegal fishing (in some areas), increasing number of fishers due to increasing population, encroachment of fishers from other provinces, and low fish catch volumes of commercially important fishes.

Importance of Mangroves

Mangroves provide nursery grounds for fish, prawns/shrimps, crabs, shellfish and other marine organisms. They serve as natural buffers for coastal areas and communities from the onslaught of strong waves and storm surges. They reduce organic pollution in nearshore areas by entrapment or absorption of organic wastes. They produce litter/detritus, which are valuable sources of food for aquatic and marine animals. They provide food and housing materials (e.g. nipa shingles). They also serve as shelter for migratory wildlife, recreational grounds for bird watching, and provide field venue for education and research.

II. STATUS OF MANGROVES

The mangroves in Ilocos Sur have a total area of 122.95 ha. Of these, 26.88 ha are old/natural stands, 8.58 ha are rehabilitated and 87.49 ha are new plantations that were established within the last ten years. The mangrove planting program in the province started in 1989. These were conducted by different agencies such as DENR, PGIS-ENRMO, BFAR, SUCs and NGOs. **Table 17** summarizes the state of mangroves in Ilocos Sur while **Table 18** shows the breakdown of old stands and new plantations per barangay.

True mangrove species found in Ilocos Sur were identified as: *Aegiceras corniculatum, Avicennia marina, Avicennia officinalis, Bruguiera cylindrica, Bruguiera gymnorrhiza, Bruguiera sexangula, Ceriops decandra, Derris trifoliate. Dolichandrone spathacea, Excoecaria agallocha, Ipomoea pes-caprae, Lumnitzera racemosa, Nypa fruticans, Osbornia octodonta, Pemphis acidula, Rhizophora apiculata, Rhizophora mucronata, Rhizophora stylosa, Sonneratia alba* and *Sonneratia caseolaris.*

Mangrove associates found in Ilocos Sur were identified as: *Acrostichum aureum, Acanthus ilicifolius, Barringtonia asiatica, Calophyllum inophyllum, Heritiera littoralis, Hibiscus tiliaceus, Pandanus tectorius, Pongamia pinnata, Sesuvium portulacastrum,* and *Terminalia catappa.*

Table 17: State of mangroves in Ilocos Sur (in hectares)

Old Stand	Secondary Growth	Plantation
26.88	8.58	87.49

Table 18: Distribution of mangroves in Ilocos Sur (in hectares)

Location	Old Stands	Plantations
Apatot, San Esteban	5.6	0
Bao-As, Sta. Lucia	0.09	2.73
Baracca and San Pedro, Mindoro, Vigan City	0	1.54
Bateria, San Esteban	0.14	0
Bia-O, Sta. Maria	0	2.88
Bulala and Mindoro, Vigan City	0	2.27
Cabangtalan, Sinait	0	1.11
Cabittaogan Sta. Catalina	0	0.02
Calongbuyan, Santa	0	0.22
Caterman, Candon City	1.01	0
Magsaysay, Santa	5.31	0
Dadalaquiten Norte, Sinait	0	0.97
Darapidap, Candon City	0	18.49
Dardarat San Juan	0	4.99
Dardarat, Cabugao	0	6.81
Don Alejandro Quirolgico	0	0.17
Don Leopoldo Yabes, Sinait	0	6.54
Katipunan, Sinait	0	2.87
Libtong, Tagudin	0	0.28
Mindoro, Vigan City	0	1.27
Nagsayaoan, Sta. Maria	0	0.08
Nangalisan, Sta. Lucia	0	0.53
Pagsanaan Sur, Magsingal	0.2	0.4
Pantay Laud, Mindoro, Vigan City	0	14.07
Paratong, Sinait	2.13	0
Paratong, Sta. Lucia	0	0.67
Paypayad, Candon City	0	3.89
Pilar, Sta. Cruz	0.71	0.49
Pug-Os, Cabugao	0	5.38
Rancho, Santa	0	0.3
Sabang, Cabugao	0	2.16
Salapasap, Cabugao	0.1	0.21
Salomague, Cabugao	1.16	1.9
San Sebastian, San Vicente	0	1.95
Solot-Solot, San Juan	0.58	0
Sulvec, Narvacan	0.17	0
Surngit, San Juan	1.91	2.67
Suso, Sta. Maria	2.2	0
Tamurong Primero, Candon City	8.19	1.96
Tamurong, Caoayan	0	4.58
Villa Hermosa, Sta. Cruz	0	1.64
Villamar, Caoayan	0	2.03
Total	**29.51**	**98.09**

Degradation of Mangrove Forests

Some of the causes of the decline of mangroves in the province are natural calamities, inadequate information dissemination, weak implementation of coastal laws, and collection/gathering of *bakauan* for materials such as decors and firewood. The decline of mangroves affected the community and environment due to the resulting erosion, siltation and low fish catch. Since there is a decline of mangroves, it is being addressed through reforestation/rehabilitation such as coastal/riverbank planting activities conducted by the different agencies and through Information, Education and Communication (IEC) campaigns.

Threats to Mangrove Forests

The mangrove-related environmental threats experienced by the province are: (1) coastal erosion due to improper construction of shoreline engineering structures, (2) lack or weak implementation of zoning ordinance, development of coastal areas for tourism and residential areas, (3) pollution due to improper waste disposal and other anthropogenic causes (e.g. oil spill), (4) storm surges, and (5) pests such as barnacles that cloak the stems of propagules and young seedlings.

III. MANGROVE PROTECTION AND MANAGEMENT

A 5-ha Mangrove Protected Area was established at Barangay Dardarat, Cabugao. It was implemented by the concerned LGU. There are policies related to mangrove protection and management such as the Provincial Environment Code, SP Resolution No. 083, s. 2011 (*Establishment of Mangrove Nursery*) and the *Bantay Kalikasan* Program. The existing mangrove stands are being managed by the PGIS-ENRMO, DENR, LGUs, SUCs, FARMCs and the Ilocos Sur Federated Fishermen Association.

Mangrove Rehabilitation

There have been efforts in the province to protect, rehabilitate or plant more mangroves. These are implemented by the different programs and projects of the PGIS-ENRMO through its TAGIBIKA Program (T*agibien Ti Kabaybayan/Karayan*) and *Bantay Kalikasan* Program; DENR- National Greening Program (NGP) and Coastal

Environment Program (CEP); LGUs, BFAR, SUCs and NGOs – Mangrove Rehabilitation Projects. The different mangrove species planted were *bakauan bato, bakauan babai, bakauan lalaki, pototan lalaki* and nipa. Mangrove associates such as *botong, bittaog, talisai, bani* and *dungon-late* were also planted.

Monitoring and Evaluation

Monitoring and evaluation are being conducted on a biannual basis. Mangrove assessment is also conducted to determine the development of the project. The survival rate is 90% (Source: BFAR).

Impacts of Mangrove Rehabilitation

The rehabilitation of mangroves help improve fisheries production (given that they serve as life support systems for different fish species), stabilize the shoreline, and reduce the effect of climate change.

Figure 9: Mangrove assessment in Ilocos Sur

Figure 10: Mangrove survey and validation

IV. SUMMARY AND RECOMMENDATIONS

1. Establishment and protection of existing mangrove areas in the province.

2. Institutionalization of a mechanism in the evaluation and monitoring of mangrove programs, projects and activities.

3. Conduct public awareness campaigns.

4. Updating of the mangrove database of Ilocos Sur.

V. REFERENCES

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