

# Ecological Zoning as a Policy Tool for Sustainable Development

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Planning for sustainable development must be founded on ecological principles so that economic objectives are harmonized with environmental constraints and social welfare concerns. Zoning is commonly employed as a land and water use planning and regulatory tool to guide and direct the type of development most favorable or advantageous to an area given its ecological constraints and socio-economic objectives.

The grouping and delineation of land and aquatic resources into various classes in accordance with their biophysical characteristics and existing condition for purposes of planning and management is generally referred to as environmental or ecological zoning. In the formulation of ecological zoning, different categories of zones are identified and their allowable, prohibited and conditional uses are defined.

In the Philippines, the zoning of land is a requirement by the government among local government units at the City and Municipal levels to regulate the uses of their lands according to their most suitable and best uses from the perspectives of economics, social and environmental sustainability. Hence, urban areas are zoned into residential, commercial, industrial, and institutional uses while non-urban lands are broadly zoned into agriculture, forest and coastal uses. However, there are now new initiatives to zone forest and coastal areas into more specific classes based on their ecological characteristics and sustainable uses. Several coastal municipalities have prepared the zoning of their coastal waters, which extends to 15 km. offshore from the shoreline but the challenge remains in the implementation of the allowable uses of their coastal areas.

This paper will discuss the three types of ecological zoning that have been developed and applied in the country at the national, local and ecosystem levels. The focus will be on the Palawan ecological zoning case study.

Aside from the standard zoning requirement aforementioned, three types of ecological zoning have also been developed and applied in the Philippines at the ecosystem and local level:

- 1) Agroecological Zoning (AEZ), which was patterned after the UN FAO's Agroecological Zoning model that was developed for application at the global scale sometime in the early eighties. The author prepared a localized version of the AEZ model and applied it at the provincial level using Palawan Province as a case study.



This model was used to delineate and map agricultural lands according to their level of edaphic and climatic suitabilities to various crops and also predicted their potential yield based on a mix of technology inputs. Because of the limited copies of the maps and reports and the absence of a program to disseminate the results of the AEZ study at the local level, very few planners and farmers have actually used and benefitted from it.

- 2) Protected Areas Zoning was developed by the Protected Areas and Wildlife Bureau (PAWB) of the Department of Environment and Natural Resources (DENR) with technical assistance from the consultants commissioned by the European Communities in the early nineties. Areas declared as Protected Areas are zoned based on their present use, ecological conditions and level of biodiversity importance. Zoning categories for terrestrial ecosystems include: 1) Strict Protection Zone; 2) Sustainable use zone; 3) Restoration zone; 4) Habitat Management Zone; 5) Multiple use zone; 6) Buffer zone; 7) Cultural zone; 8) Recreational zone; and 9) Special use zone. The PA zoning is a regulatory instrument that is applied at the ecosystem level such as forest and coastal marine ecosystems and habitats that usually comprise two or more provinces or several municipalities within a province or several provinces. The enforcement of the zoning regulations remain inadequate because of the low priority they receive in the allotment of government funds.
- 3) Environmentally-critical areas network (ECAN) Zoning was developed for application to the Palawan Province, which is considered as the last remaining frontier in the Philippines. ECAN Zoning is mandated in the Strategic Environmental Plan (SEP) law or Republic Act 7611 that was enacted in 1992, and how it should be carried out is also fully described in this law. ECAN zoning relates terrestrial and aquatic resources planning in a landscape and seascape continuum and regulates the uses and management of the natural environment of the Province. ECAN zoning categories are more or less similar to the PA zoning except for some categories that are distinct from the PA zoning. The zoning categories of ECAN for the terrestrial component are: 1) Core zone; 2) Buffer use zone and 3) Multiple use zone.

The zoning categories for coastal and marine components comprise the following: 1) Coastal/Marine Core Zone; 2) Coastal/Marine Multiple Use Zone; and 3) Ancestral Coastal/Marine Waters .

The ECAN zoning is integrated into the Comprehensive Land Use Plans (CLUPs) of the city and municipalities of the province thereby making it an integral part of the local development plan of the LGUs. The Palawan Council for Sustainable Development sees to it that all types of development in Palawan province should conform to the regulatory framework of the ECAN zoning.

Based on the experience of ECAN Zoning in Palawan province, the following factors determine the success of its implementation and enforcement: 1) presence of a legal mandate and framework; 2) local participation in ECAN zoning enforcement; 3) shared governance, partnership and unified actions through "bayanihan" or cooperativism; 4) dedicated IEC and advocacy campaigns 5) voluntary change, peer pressure, incentive system and inculcation of respect for ecological integrity; 6) skills training and development of alternative sustainable livelihood; 7) investment in human resources capital development; 8) ensuring sustainable financing; 8) ecosystem management, rehabilitation of degraded areas, adoption of conservation methods, promotion of property rights and/or usufructuary rights; 9) operational monitoring, surveillance and evaluation systems; 10) internalization of ENR management; value system reformation and acculturation; 11) strict law enforcement including apprehension and prosecution; and 12) establishment of local safeguard mechanisms against resource exploitation by the powerful and influential.

ECAN Zoning has proven to be a valuable tool for sustainable development of Palawan province and it is now widely implemented in the city and all municipalities of the province.