

**TOWARDS INCLUSIVE, INTEGRATIVE AND INFORMED SPATIAL PLANNING IN ACEH BARAT****Sonya Dewi, Andree Ekadinata and Feri Johana**World Agroforestry Centre (ICRAF), Jl. CIFOR, Situ Gede, Sindang Barang, P O Box 161, Bogor 16001, Indonesia; [S.Dewi@cgiar.org](mailto:S.Dewi@cgiar.org); Fax: +62-251-8625416**Abstract**

Spatial planning has been a standard and regular government management tool from national to district level but lost its true meaning and purposes due to ways it is addressed. The process of making, discussing, implementing, monitoring and evaluating it is just another routine task among many. In addition, due to lack of in-house capacity, spatial planning at the district and provincial level are, more often than not, sub-contracted to consultants, often from distant places. The single product comes out of it is a hardcopy map of the so-called spatial plan, which often remains to be wall papers in some offices. The process of planning, when it is done effectively, can be at least as important an output as the plan itself and also can increase the probability of success during the implementation stage.

Aceh Barat after Tsunami faces a lot of rapid changes. The needs for land resources by local people for resettlement, agriculture and agroforests, the need for construction materials, the need for revenue by local government in terms of investment in mining and plantation, population growth in the future and the need for economic growth is already exerting pressure on land and natural resources. In many places in developing countries, this type of increased demand for land and resources leads to marginalization of local people. In anticipation to this, a spatial planning process that is *inclusive* of local stakeholders' active participation, is *integrative* between development and land and other natural resource planning and management at different levels, and is *well-informed* regarding data of past and present conditions, economics and ecological principles and future options should be in place.

A local initiative and commitment are essential to this and some technical support from external parties during early steps can help accelerate the preparedness of local platform in conducting an inclusive, integrative and informed spatial planning process. This is among the lessons learnt from the collaboration between ICRAF and Aceh Barat during the last two and a half year. However since spatial planning is in the very interface between technical and political tools of natural and non-natural resource management, it needs much more effort than a small component of a moderate funded project of an international research institution can do to get a real spatial planning process happening in a full gear. Synergizing it with the district planning as a whole, with the provincial and also national planning is necessary, given that the local platform is ready to take it off.

**Introduction**

Planning is only necessary when there are set objectives or targets to achieve and resources available to achieve them. Resources include time, human, money, land, forest, water, etc. Spatial planning in the context of land uses and development for achieving sustainable livelihoods in the rural areas is no exception. It is of extreme importance to optimize and prioritize land use because of limited land and other natural resources,

limited ways to achieve sustainable livelihood objectives, increased needs for resources over time due to development and population increases. Other reasons include spatial variation in human, social, physical, financial and natural capitals and the objectives among stakeholders, and uneven spatial distribution, correlation and interaction of stakeholders, resources, needs, constraints and opportunities.

In developing countries in general, spatial planning process is sub-optimal due to lack of capacity, data and money, and, more seriously, political commitment. Dalal Clayton et al. (2003) summarize trends and lessons learnt from rural planning in several developing countries in Asia, Africa and Latin America as they shifted towards more decentralized process with participations of broader communities, more focused on sustainable livelihoods, more explicit in addressing land tenure issues and rural-urban linkages. Whilst the plan as an output of the process is useful management tool, if implemented appropriately, the process itself is a significant output.

In Indonesia, land use planning and development planning are standard government tools and have been regulated by presidential decrees, UU No. 26/2007 and UU No. 25/2004 respectively (Rizal, 2007). The two regulations are independent, a fact that reflects the political disparity and incoherence within the central government (Rizal, 2007). In practice, the two planning processes are completely separate at all levels from the central down to the local level. At the local level, land use planning is often sub-contracted to external consultants, who do not possess a good understanding of the local context; the process does not include any participation of the local stakeholders. Development planning is conducted without any consideration of locally-specific and spatially-explicit needs, constraints and opportunities, and it is highly sectoral. There is little, if any, synergy between the two planning processes. Criteria and indicators for monitoring and evaluation are not integral part of planning; and planning is not based on past evaluation, lessons learnt and actual data.

### **Integrative, Inclusive and Informed Spatial Planning (I3SPA)**

Especially when funding and human resources to conduct and implement planning are limited, areas are widely dispersed and capitals are spatially heterogeneous, a well-coordinated and cost-effective planning process that bridges the disparity among land use planning and development planning is necessary. For this, a common reference which captures the essential elements in each planning will function as an ID key to relate all those elements. Geographic reference is the best option, since most existing data and data collection are now geographically references and more substantially, all planning elements such as socio-economic, land resources and other capitals, enabling and barrier factors to development and conservation are highly location specific. In addition those elements also interact spatially: close-by areas interact strongly compared to further-apart area.

We therefore propose a spatial planning to be a solution to the dichotomy among land use planning and development planning processes, which if done completely is not effective in terms of cost of planning and not efficient in terms of probability of success in implementing the plan and achieving the objectives. Three principles for a good spatial planning process are identified: integrative, inclusive and informed. These principles embrace principles and guidelines for land use planning outlined previously by various groups, e.g., Amler et al., 1999, Dale et al, 2000 van Lier, 2002, Enemark, 2003, Dalal Clayton, 2003, FAO guidelines, Baker, 2006.

Spatial planning should be integrative by respecting simultaneously economic and ecological principles of land use and development planning for sustainable livelihoods. Consideration of all sectors under horizontal coordination of the government of which administrative level matches the scope of the planning. This non-sectoral approach should embed some economic processes, e.g., location theory, in which input cost is minimized, market access is maximized and therefore benefit is optimized through e.g., selecting location of enterprises in relation to market and other supporting factors. Central place theory can help place service centers for optimized results and growth pole theory that anticipate trickle and spread effect with an introduction of a leading enterprise. Vertical coordination across different levels of governments should be sought. Planning process should be decentralized: the government of planning scope should be responsible to plan their administrative units rather than the central government driving the plan. However it should also be synergized with the upper and lower levels planning.

Inclusive spatial planning raises the probability of success of planning and implementation because of the involvement of all immediate beneficiaries. Stakeholder identification and partnerships in playing active and consistent roles in each step of the planning process (including implementation, monitoring and evaluation) are necessary. Different interests, needs and perception about land ownerships, resource access etc., among stakeholders should be considered. Voices of marginal and minority groups should be included. Equitable access to information, problems and options should be promoted. This stakeholder platform should function as a negotiation platform.

To be well-informed, spatial planning has to be based on proper and accurate data and information of past and present conditions: sources of data and information are known and reliable, date of production/collection should be accurate, and the scale and level of accuracy of the data should be proper for the purposes. Economics and ecological principles derived from scientific research, local knowledge and policies should be drawn. Identification of drivers of changes and anticipation of changes in drivers of changes are important in deriving options based on analysis of constraints and opportunities.

### **The need for spatial planning in Aceh Barat**

The coastal area of West Aceh was struck badly by the Indian Ocean tsunami in December 2004. In this area, flat coastal zones are mostly allocated for non-forest uses and further along to the hinterland, as topography becomes rougher, land use allocation becomes stricter. These areas are at present still largely covered by forest. However, the Tsunami incident induced rapid changes. There is an increasing need for land for resettlements, cultivation, extraction of construction materials and mining and plantation. The demand is high due to population growth, in-migrants following peace agreement, economic development and interest of external investors.

The government needs to anticipate some potential directions of change in order to develop effective and efficient policies in maintaining environmental services while improving people's livelihoods. Dewi and Ekadinata (2007) conclude that within the current land use plan, West Aceh does not really have much flexibility to expand land-based economic activities by converting forests into other uses. They suggest that development programmes should consider growth enabling factors like road and market access and improvement in agricultural technology, especially for high economic value

commodities to increase productivity and economic benefits. Multifunctional and diverse landscapes should be maintained. Under this current rapid change and growing complications of stakeholder relations, Aceh Barat urgently needs land use planning and development planning to be combined into an Integrated, Inclusive and Informed Spatial Planning (I3SPA).

### **Examples of application of I3SPA in Aceh Barat**

In this paper we present three examples of simple applications of I3SPA in Aceh Barat that illustrates the integrative and informed principles, and touches on the inclusivity principle. The first example compares the projection of demand for land for staple food to available suitable land for expansion of area for growing staple food. The calculation can be done in non-spatially explicit way by lumping the whole district into one unit of analysis as commonly done. However, distribution of land suitable and available for expansion may not be able to support the need according to projected population growth in particular area within a district. Figure 1 shows villages in Aceh Barat with potential shortage of staple food area expansion with regard to projected population growth. The red areas in the coastal region might not be as alarming as those in the hinterland regarding vulnerability to food insecurity and livelihood in general because road access is good and opportunities to create income are bigger.

The second example picks up district government plan to promote some export commodities, i.e., rubber and oil palm, as part of their development programmes. Feasibility regarding available (within land allocated for non-forest) land that is suitable (physically - soil, topography, climate) for planting rubber and oil palm, sufficient (local) labour and existence of road for market access and processing facilities. Figures 2(a) and 2(b) show feasibility of rubber and oil palm expansion in the district. The area with high to medium feasibility for oil palm expansion is not extensive; big clusters located in the southwestern area, along the border of Nagan Raya district while for rubber the big clusters are in the south-east.

A planning process is a continuous and cyclic process of planning, implementation, monitoring, evaluation, re-planning since objectives, capitals, stakeholders, external driving factors and relationships among each component are all dynamics. Some land allocation that seems best five years ago may not be feasible now.

The third example presents a re-evaluation of the current plan against the present situation: population growth, land uses and enabling development factors. According to these and other biophysical factors, functions of lands are grouped into ecological, economics and mixed (multifunctional), an updated land allocation can be proposed. The rules, factors and grouping should be negotiated among stakeholders while taking into account the information and knowledge about ecological and economic principles and research findings. In our example, we did re-grouping based on land suitability, current land use plan (allocation based on function), current actual land uses, and also population and road density. Figure 3(a) shows the current land allocation and Figure 3(b) shows proposed land allocation based on the re-grouping.

### **Towards I3SPA in Aceh Barat**

Constraints for I3SPA in Aceh Barat are shared by most rural areas in developing countries (Counsell et al, 2006), namely: lack of data and capacity (technical, facilitation,

institutional). Opportunities in Aceh Barat are quite large with the existence of NGOs and other international and national research organizations that are willing to contribute to data, hardware, software and capacity building. More importantly, government's commitment toward integrative, inclusive and informed planning process is strong.

In addressing the need, removing constraints and making use of the opportunities in conducting spatial planning, ICARF has worked together with the local government in terms of sharing compiled data and experiences, providing tailor-made trainings on basic Remote Sensing and GIS technology, spatial analysis for I3SPA, and application of FALLOW model, a spatially-explicit process-based model of land use decision making by farmers. We consistently use and encourage the use of open source software such as ILWIS for GIS/RS. We also facilitate communication and active participation of district officials in spatial planning-related issues and data exchanges across offices.

Towards the I3SPA, Aceh Barat will need to encourage stakeholders' active participations in the planning process, develop a nested system, iteration and integration in the cycle of planning process, develop and maintain a data center that hosts data and flow of data from and to different institutions. Collaborations with other institutions which have mandates and experiences will be helpful. ICRAF as a research institution can contribute to the I3SPA by continuing to facilitate Aceh Barat working group, helping Aceh Barat to build and manage their spatial data centre, assisting the district planning process, within provincial and also national planning stages.

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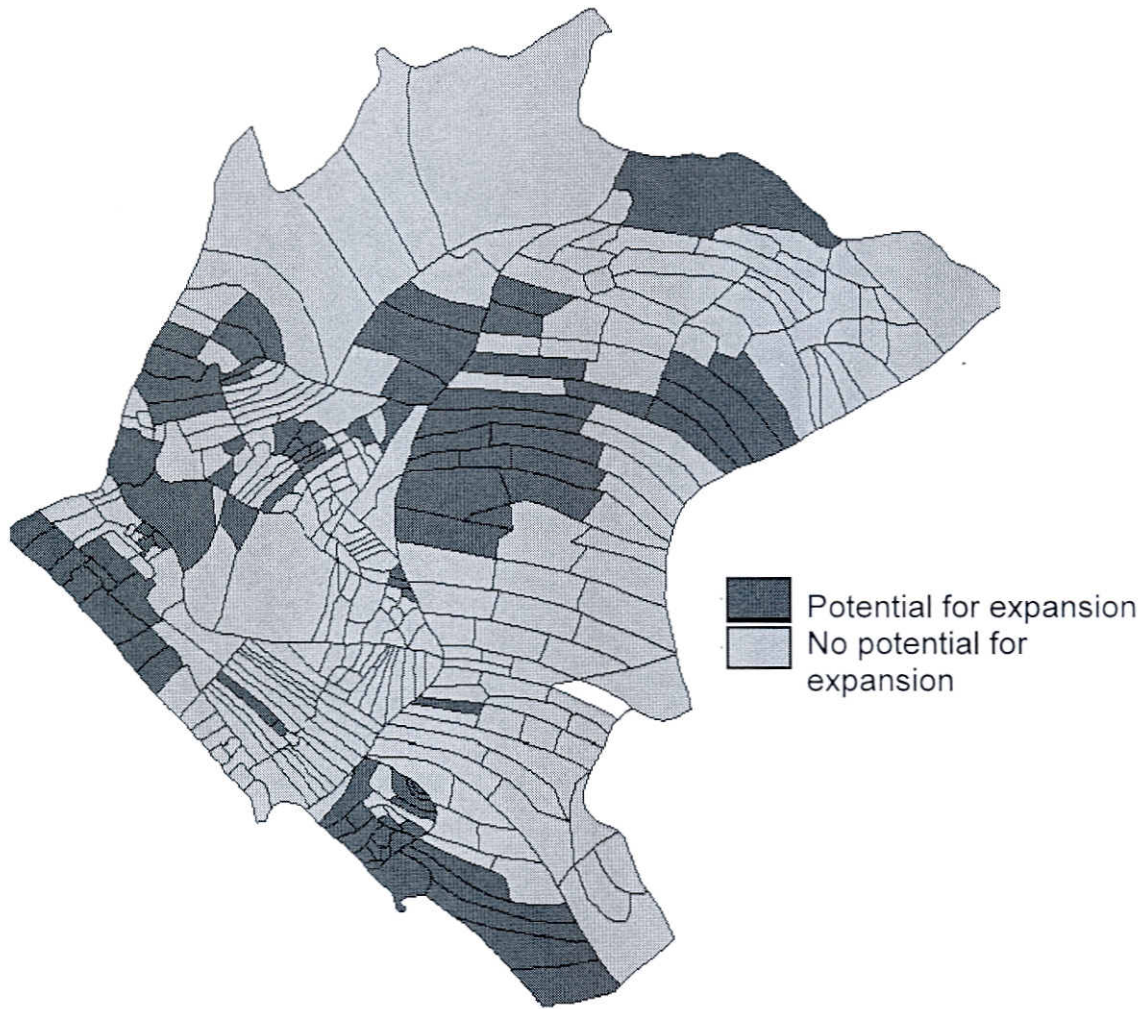


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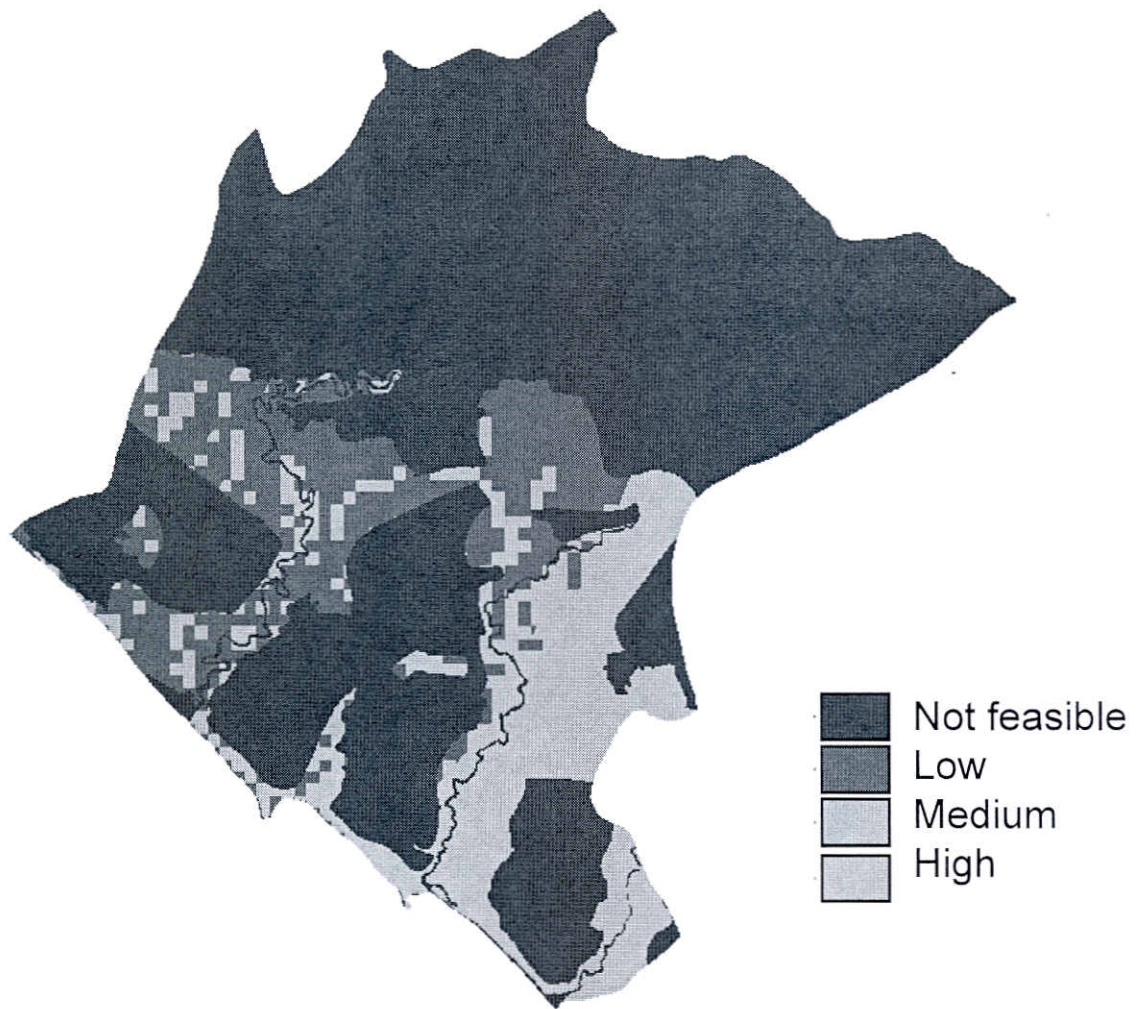


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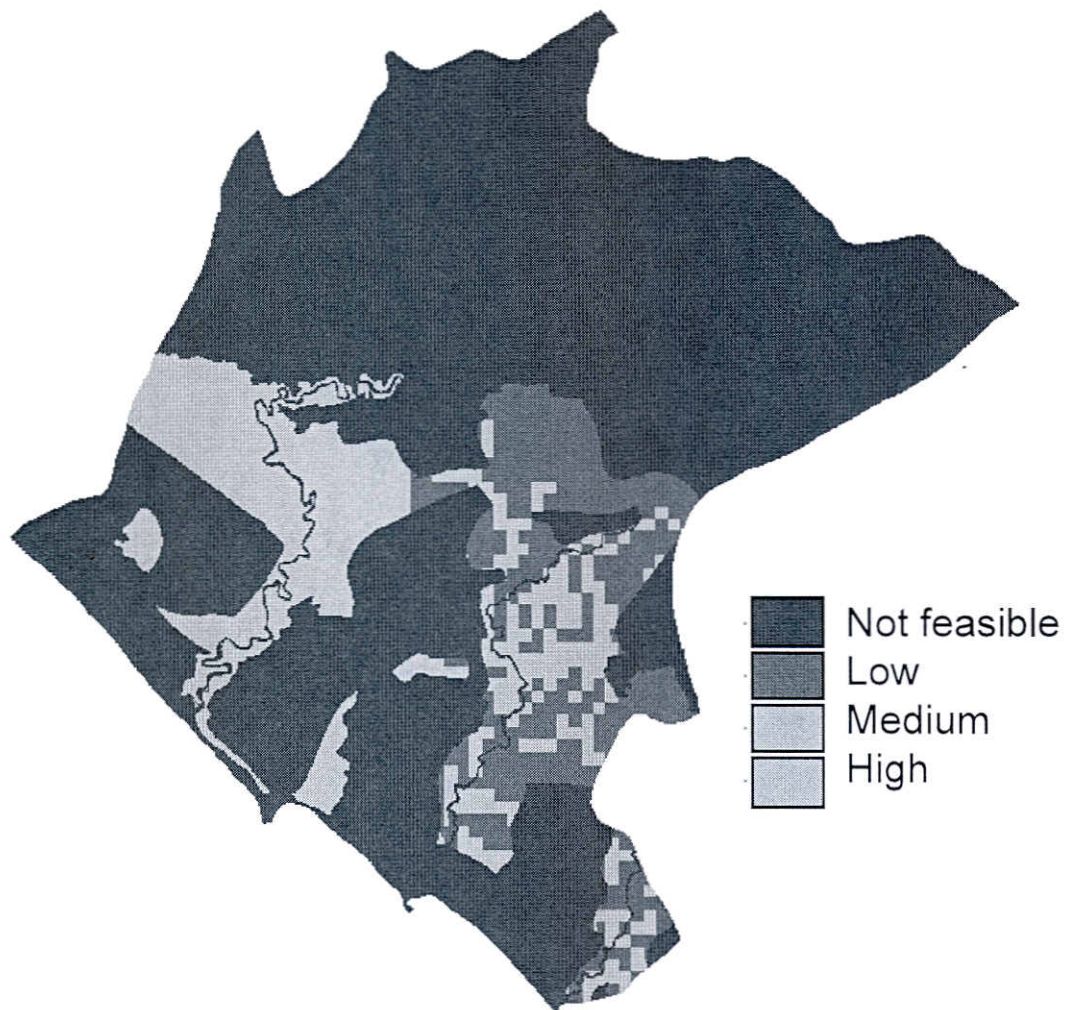


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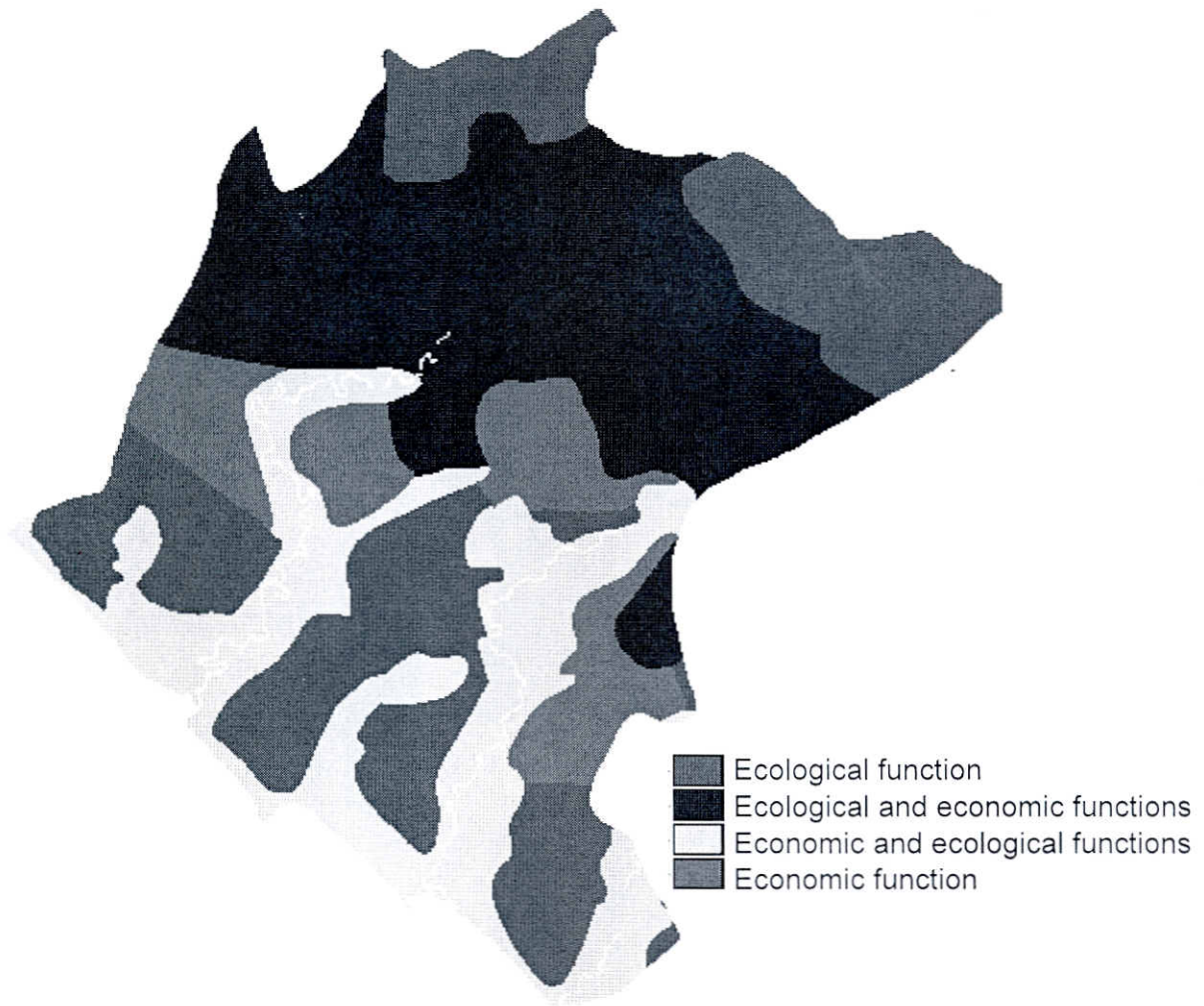


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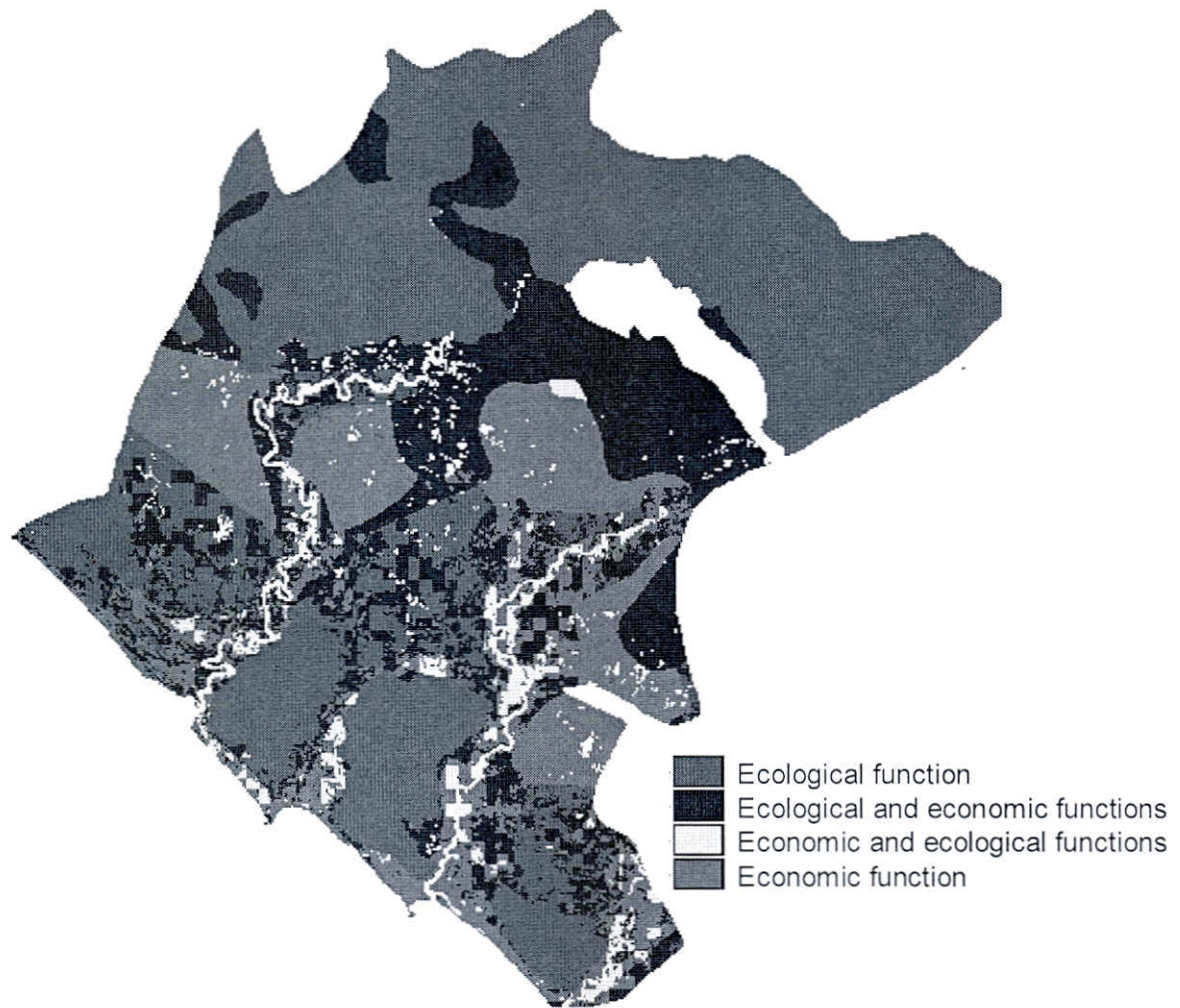


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