

NATURAL RESOURCE MANAGEMENT POLICY: A CHALLENGE FOR SUSTAINABLE DEVELOPMENT IN INDONESIA

Syaifudin Zakir¹ and Restu Juniah²

Since biodiversity is medicine, food, and life support system all in one, not only for the present time but also for future generations, we may not destroy or pollute it. If only we use more reason the result will be amazing, since it is a miraculous economic resource.

(Emil Salim, at National Workshop on Forestry Statement Forum in Jakarta, December 2005).

Appropriate natural resource management is a basic requirement for any sustainable development plan. This paper argues that natural ecosystems and their biodiversity need to be protected, and must therefore be considered carefully by policy makers as a key parameter in making decisions about natural resource exploitation. Development paradigms that overemphasize economic parameters and short-term material gain have tended to ignore the destructive aspect of resource extraction on the ecosystem and biodiversity. This short-sighted approach must give way to more responsible policy making and policy implementation. Indonesia is now considering how best to proceed towards a sustainable development paradigm, and how best to fulfil its role in global efforts to mitigate global warming and other forms of environmental change.

Indonesia's geographical condition as an archipelago makes the country particularly fragile to the climate change. Indonesia's total landmass of 1.9 million km² consists of 17,000 islands and islets, and 5.8 million km² of the ocean. Most capital cities and provincial cities are located in coastal or riverine areas, and 65 % of population live in the vicinity of the 81,000 km long coastline. Indonesians are becoming more and more aware of research indicating that the concentration of CO₂ in the atmosphere has risen from 265-285 ppm in 1750-1800 (before the Industrial Revolution)

- Marxista*, Campinas: Centro de Estudos Marxistas, No.16. Available at: <http://www.unicamp.br/cemarx/criticamarxista/16chesnais.pdf>> Access on 30/11/2011.
- Ingold, Tim. 1995. 'Globes and Spheres: the topology of environmentalism'. Milton, K. (eds.) *Environmentalism: the view from anthropology*. London: Routledge, p. 31-42.
- 2000. *The Perception of the Environment: essays in livelihood, dwelling and skill*. New York: Routledge.
- Latour, Bruno 2000. *Ciência em Ação: como seguir cientistas e engenheiros sociedade afora*. São Paulo: Editora UNESP.
- Oliveira, Raquel. 2008. 'Dividir em Comum: práticas costumeiras de transmissão do patrimônio familiar no Médio Jequitinhonha'. Dissertation. Master in Sociology, Belo Horizonte: UFMG.
- Ribeiro, Morel 2008. 'O Licenciamento Ambiental de Aproveitamentos Hidrelétricos: o espaço da adequação'. Dissertation, Master in Geography. Belo Horizonte: UFMG.
- Rothman, Franklin (ed.) 2008. *Vidas Alagadas: conflitos socioambientais, licenciamento e barragens*. Viçosa: Editora UFV.
- Scott, Parry 2009. *Negociações e Resistências Persistentes: agricultores e a barragem de Itaparica num contexto de descaso planejado*. Recife: Editora UFPE.
- Schneider, Sergio 2003. *A Pluriatividade na Agricultura Familiar*. Porto Alegre: Editora da UFRGS.
- Sperling, Eduardo von and Processo Perícia 2006. 38.13.012165-7, Classe: 7100-Ação Civil Pública. Requerente: Ministério Público Federal; Réu: Companhia Energética de Minas Gerais – CEMIG. Fls 1393-1414.
- Zhouri, Andréa. 2004. 'Global-Local Amazon Politics: conflicting paradigms of the rainforest campaign'. *Theory, Culture & Society* 21(2):69-89.
- 2010. 'Adverse Forces in the Brazilian Amazon: Developmentalism versus Environmentalism and Indigenous Rights'. *The Journal of Environment and Development* 19:252-273.
- (ed.) 2011. *As Tensões do Lugar. Hidrelétricas, Sujeitos e Licenciamento Ambiental*. Belo Horizonte: Editora da UFMG.
- (ed.) 2012. *Desenvolvimento, reconhecimento de direitos e conflitos territoriais*. Brasília: Associação Brasileira de Antropologia (ABA).
- Zhouri, Andréa, Klemens Laschefski and Angela Paiva 2005. 'Uma Sociologia do Licenciamento Ambiental: o caso das hidrelétricas em Minas Gerais'. In A. Zhouri, K. Laschefski and D.Pereira (eds.), *A Insustentável Leveza da Política Ambiental: desenvolvimento e conflitos socioambientais*. Belo Horizonte: Autêntica, p. 89-116.
- Wolf, Eric 1966. *Peasants*. Foundations of Modern Anthropology Series. Englewood Cliffs, New Jersey: Prentice Hall.
- Woortmann, Ellen. 1983. 'O Sítio Camponês'. *Anuário Antropológico* 81:164-203. Rio de Janeiro: Editora Tempo Brasileiro.

NATURAL RESOURCE MANAGEMENT POLICY: A CHALLENGE FOR SUSTAINABLE DEVELOPMENT IN INDONESIA

Syaifudin Zakir¹ and Restu Juniah²

Since biodiversity is medicine, food, and life support system all in one, not only for the present time but also for future generations, we may not destroy or pollute it. If only we use more reason the result will be amazing, since it is a miraculous economic resource.

(Emil Salim, at National Workshop on Forestry Statement Forum in Jakarta, December 2005).

Appropriate natural resource management is a basic requirement for any sustainable development plan. This paper argues that natural ecosystems and their biodiversity need to be protected, and must therefore be considered carefully by policy makers as a key parameter in making decisions about natural resource exploitation. Development paradigms that overemphasize economic parameters and short-term material gain have tended to ignore the destructive aspect of resource extraction on the ecosystem and biodiversity. This short-sighted approach must give way to more responsible policy making and policy implementation. Indonesia is now considering how best to proceed towards a sustainable development paradigm, and how best to fulfil its role in global efforts to mitigate global warming and other forms of environmental change.

Indonesia's geographical condition as an archipelago makes the country particularly fragile to the climate change. Indonesia's total landmass of 1.9 million km² consists of 17,000 islands and islets, and 5.8 million km² of the ocean. Most capital cities and provincial cities are located in coastal or riverine areas, and 65 % of population live in the vicinity of the 81,000 km long coastline. Indonesians are becoming more and more aware of research indicating that the concentration of CO₂ in the atmosphere has risen from 265-285 ppm in 1750-1800 (before the Industrial Revolution)

the need of different environmental components (natural and human, community government and business) must be based on environmental laws and ecological principles. In brief, some of the fundamental principles in environmental science are: Interaction, Interdependency, Diversity, Harmony, and Sustainability.

The application of these principles to the development of agriculture, urban planning and even mining will contribute to the sustainability of the environment and of the development itself. According to Harris and Goodwin (2001), the three aspects of sustainability are economics, social environment, and ecology.

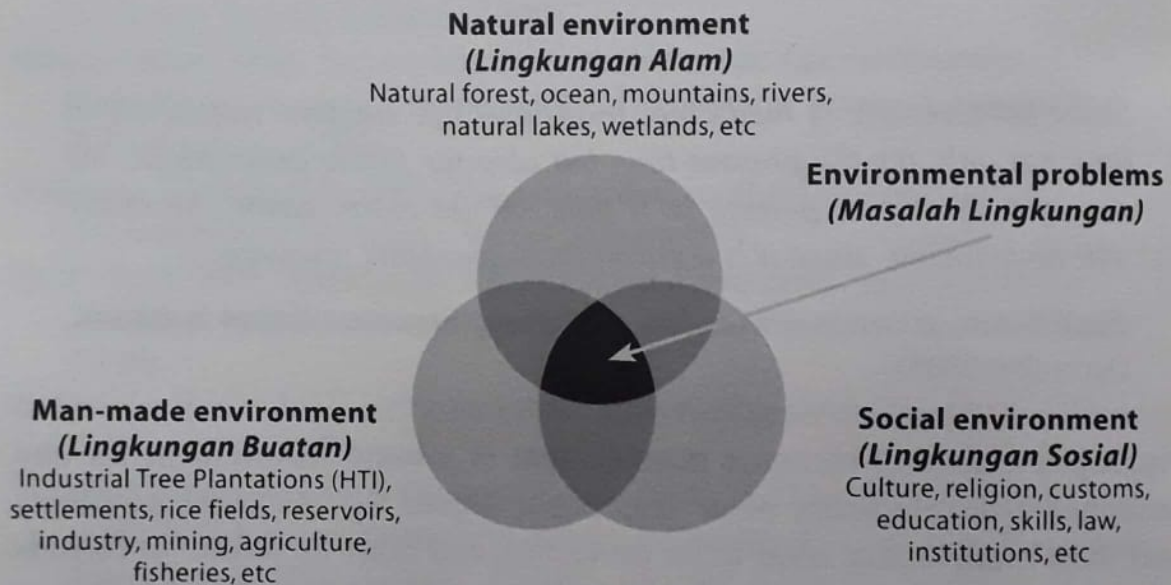


Figure 16-1: Environment Components.

Trends and Causes of Biodiversity Degradation

In theory some cases biodiversity loss can be due to natural processes, but in reality the sharp depletion rate and environmental destruction we are witnessing today is caused by human activity. The Indonesian Ministry of Environment 2009 Report informs us that 1/3 of Indonesia's "forest area" is has no more trees on it, with the area of critical deforestation approaching 60 million hectare. Meanwhile in Indonesia's ocean, only 30 per cent of coral reefs remain in optimal condition, 40 per cent show medium-level damage, and the remaining 30 per cent are in the worst condition category.

In general, the main challenges in salvaging Indonesia's biodiversity consist of: (a) the increase of population; (b) deforestation and forest fire; (c) over-exploitation of the forest and marine resources; (d) habitat

fragmentation and destruction. These four challenges place pressure on the ecosystem and accelerate the biodiversity depletion rate (Salim 2010).

If we observe deeply, these challenges could be further analysed as causal factors (*underlying causes*) and associated push factor (*drivers*) in the extinction of the biodiversity, including:

- 1 A development policy that prioritizes economic growth and abandons the principle of ecosystem balance, and is reluctant to adopt ecosystem integrity measurements. For more than four decades Indonesian economic development has been ignoring the ecosystem balance. The government still does not want to acknowledge fully the depletion of natural resource (including minerals, forest and marine products and biodiversity) because rapid economic development remains its main goal. This policy tends to be exploitative and permits the irresponsible utilization of the natural resource. Businesses thus never ask what may be the most responsible way of managing the natural resources according to the principles of sustainability, undermining their own long term activity, and also causing rapid ecosystem and biodiversity degradation.



Figure 16-2: Exploitation of Natural Resources.

- 2 Development that prioritizes the capital owner and marginalizes the poor and traditional/local community, jeopardizing their role as key stakeholder in sustainable ecosystem and natural resource management. The government is reluctant to take the necessary steps to give the maximum benefit to the, local community and traditional landowners, preferring to displace people instead in order to expedite commercial resource exploitation according to the company preference. This goes hand in hand with a tendency to ignore the

ecosystem and allow reckless exploitation of the forest and the sea in areas with rich mineral deposits.

- 3 Excessive exploitation of natural resources in the forest and sea, and ignorance of the sustainable principles are reflected in the government policy in the regulation of logging concessions. Permissions for logging by far surpass the forest's ability for recovery. In addition, illegal logging is an organized criminal activity operating with impunity on a massive scale in Indonesia, which has contributed to forest destruction and makes up a large proportion of the timber industry.



Figure 16-3: Forest Destruction and Mining Activity.

Source: WWF Indonesia, 2005-2010.

- 4 Corruption and bad natural resource governance in dealing with matter such as forest conversion and the allocation and distribution of sources have also obstructed Indonesian communities' efforts to move forward toward a better level of social welfare. One could say that Indonesian is on under a "resource curse," whereby the plunder of natural resources is closely associated with corruption, dehumanization of local people and poverty. Corruption is a key component in this irresponsible natural resource exploitation pattern, and thus a major driver of ecosystem and biodiversity destruction.

A Rescue Strategy

A strategy for sustainable natural resource management into the future should consider two aspects of resource use: consumers as the users of resources, and producers as the service providers who convert natural

resources into products. Both groups must have a stronger commitment to biodiversity conservation and sustainability. There are two strategies to prevent biodiversity loss and ecosystem destruction due to development, namely the principle of "no net loss" in biodiversity and ecosystem integrity and the principle of supporting businesses and economic activity. From the government side, the "no net loss principle" can be exceeded, by promoting conservation initiatives with a positive impact on biodiversity ("net positive impact on biodiversity principle"), thus reversing the trend from a decline in ecosystem quality to an improvement.

This strategy can be applied in stages globally, regionally, nationally and locally, through different layers of government, with cooperation from international and local companies, and with involvement of local communities and conservation organizations within a multi-stakeholder plan. Such a strategy would include:

- 1 Agreement on the measurement that will be used as an indicator of biodiversity (*matrices*) in anticipation of complaints from business people who always say it is impossible to govern unmeasurable items. The terms of any deal, specifying a balance between biodiversity and business profitability, should be calculable, and performance should be evaluated periodically.. Concrete measurement should be performed even if the modelling is not yet perfect at the beginning. The measurement would include forest density and biodiversity assessment. (The absence of concrete measurement of biodiversity has been a major challenge in its governance.)
- 2 Pricing mechanisms and efforts in biodiversity rescue based on international agreements and initiatives. The market so far has not been a good instrument for pricing natural resources appropriately, with corporations often treating ecosystem damage as an externality. Ecosystems and their biodiversity, including the services derived thereof, are a public good and must not be destroyed with impunity by vested interests. Agro-forestry activity in upstream water catchment areas, for example, contributes to flood risk prevention for downstream settlements (as a side benefit from the cultivation activity). Without positive externality compensation, ecosystem services such as flood prevention initiatives will not be sufficiently valued. Government can set a price for biodiversity to reflect the internalization of ecological destruction costs. Government also can directly allocate revenue from taxation on activities causing biodiversity

degradation, such as pollution taxes, to biodiversity rescuers (such as national park management, whose work to protect the ecosystem provides a service enjoyed by surround businesses and communities). This can be achieved by legislating to impose an obligatory biodiversity offset payment on companies whose activities have an unavoidable, negative impact on biodiversity.

- 3 Expansion of instruments, mechanism and institution to ensure environmental fringe benefits are paid for (payment for ecosystem services, PES) through taxation or a compensation obligation channelled to and utilized by biodiversity rescue services. The instruments consist of:
 - (a) Credible measurement, reporting, and monitoring mechanism (MRV: measurable, reportable and verifiable).
 - (b) Credit certification mechanisms on biodiversity (biodiversity credit), such as have been applied by some palm oil plantation in Sabah, Malaysia. This mechanism can be applied in conjunction with REDD (Reducing Emissions from Deforestation and Degradation) initiatives because forest protection to minimize emission simultaneously tends to benefit biodiversity.
 - (c) Development of a biodiversity banking scheme to facilitate the biodiversity credit trading.
 - (d) Implementation of regulations relating to biodiversity offsets for mining company, forestry, and real estate or housing developers (in Australia, USA, Netherlands etc.).
 - (e) Transfer mechanism for direct payment or compensation at a local level.
 - (f) Effective local organization for community-based ecosystem governance.
- 4 Full government support, especially in counties mega-biodiversity, for a *No Net Loss* or *Net Positive Impact on Biodiversity* Policy.

Conclusion

Policy on natural resource management in the context of sustainable development should not ignore the ecosystem and biodiversity, that is, the earth and the whole web of life on which every human community depends. Without healthy ecosystems and biodiversity we cannot maintain national

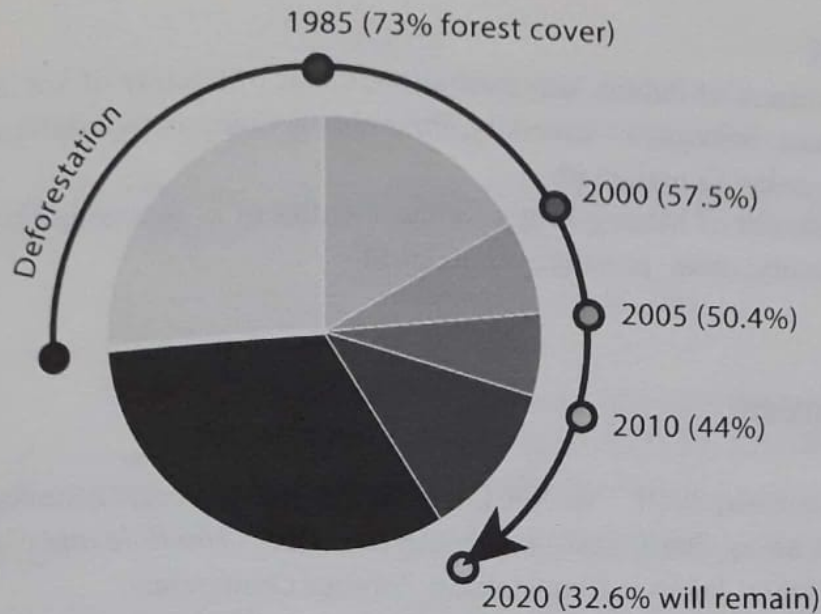


Figure 16-4: Forest Destruction Rate in Kalimantan.

Data from WWF 2005, mongabay.com

resilience, because we depend on the ecosystem for water, food and soil nutrient availability, and energy. Climate change, natural catastrophes and outbreaks of transmissible diseases are all related to biodiversity issues.

Development paradigm which over emphasis on economy and material wealthy aspect had ignored and destructed ecosystem and biodiversity, based on this reason the policy system formulation should be in accordance with the global system which the approach more enacted to the living environment and natural resource and should able to preserve biodiversity from extinction.

Value, or economic expectation, should be attributed to biodiversity and other environmental services as a competitive incentive for greater conservation activity. The private sector should participate actively to biodiversity conservation and ecosystem restoration on this basis.



Figure 16-4: Mine Tailings Pond

Source: WWF 2005, mongabay.com

Notes

- 1 Department of Public Administration. Chair of Faculty of Social and Political Sciences, Sriwijaya University, Palembang Campus, syaifudinzakir@yahoo.com; szakir@unsri.ac.id.
- 2 Department of Mining Engineering, Faculty of Engineering Sriwijaya University, restu_juniah@yahoo.co.id

References

- Ahmad, Mubariq 2010. 'No Net Loss! Biodiversity Preserve Strategy.' In Iwan J. and et. al. es. 2010. *Sustainable Development: The Role and Contribution of Emil Salim*. Jakarta: Kepustakaan Populer Gramedia.
- Azis, Iwan J., Lydia M. Napitupulu et. al. (eds.) 2010. *Sustainable Development, Role and Contribution of Emil Salim*. Jakarta: Kepustakaan Populer Gramedia.
- Harris, Jonathan M., Nova R. Goodwin et.al (eds.) 2001. *A Survey of Sustainable Development Social and Economic Dimensions*. Washington DC, USA: Island Press.
- IUCN 2014. 'The IUCN Red List of Threatened Species, 2014.2.' <http://www.iucnredlist.org/initiatives/mammals/analysis>
- Juniah Restu, Syaifudin Zakir 2010. *A Study of Mining Management Reclamation in Post Mining Area Model: Mitigation of Climate Change Mining Sector as Effort of Environment Protection on Sustainable Post Mining*. Jakarta: University of Indonesia and University of Sriwijaya.
- State Minister of the Environment 1998. *Policy and National Strategy in Environment Management: In Second Long Term Development (1994/1995-2019/2020)*. Jakarta: Office of State Minister of Environment.
- Salim, Emil 2000. 'Reflecting Earth.' In Emil Salim 2000, *Back to The Right Way, Essays 1966-1999*. Jakarta: Alvabet.
- Soelarno, Soemarno and Witoro 2007. *Development Planning of Post Mining Area to Support the Sustainable Development (Case Study on Coal Mining by PT Kaltim Prima Coal in East Kutai Regency, East Kalimantan Province)*. Unpublished dissertation. Jakarta: PSIL, University of Indonesia.
- World Wildlife Fund 2005-2010. *Photo documentation of environment degradation in Indonesia*.

Web References

- <http://www.greenmining.info/detail.php?x=kegiatan&y=4b0442930f7790199ce6539c70f9fd82>
- <http://www.pme-indonesia.com/news/?catId=5&newsId=442>