

Forest Loss in Indonesia: Imperiling Environment Security in Asia-Pacific

Fanie Herman

Graduate Institute of International Politics, National Chung Hsing University, Master
student

《Abstract》

Current literature on deforestation in Indonesia presents a multitude of data on the local environmental effects. But a framework incorporating the causes and implications for the Asia-Pacific region is incomplete and underdeveloped. The aim is to provide answers to the question if deforestation in Indonesia is caused by human ignorance, mismanagement and design or by accident and what the non-traditional security threat/s to the region is. An environmental approach examines the deforestation picture in its global context, then narrowing the scope down to a conception and operational definition for the region. The main findings suggest that uncontrolled management of deforestation creates uneven natural resource distribution, asymmetrical environmental issue-linkages, ecological imbalances and regional climate change. Empirical data shows that by the year 2015, the islands of Sumatra, Sulawesi and Kalimantan will be cleared of its natural vegetation. In contrast to the middle half of the twentieth century, when approximately 50% of Indonesia was still covered with lush and tropical rainforests, the current picture seems a little gloomy. By the end of 2007, 72% of the natural rainforests have been cut down. This means that Indonesian timber, unless drastic measures are not taken, will lose its natural resource value. The implication is that Asian-Pacific countries will feel the burden of increased resource rivalry. In conclusion, it is not possible to reverse the process of deforestation in Indonesia, but the local and regional effects can be ameliorated by effective control and management. A recommendation is that interest groups, for example Global Forest Watch (GFW) should have more say in the negotiation process between the multinationals and government agents. Impact studies by environmental groups can shed light on the biodiversity and ecological dimensions. It is important that governments in the region realize the nature of the problem. Not only will the immediate environment be protected for future generations, but the issue of global warming will also be addressed.

Keywords: deforestation, Asia-Pacific-region, environmental security, climate change, resource rivalry, control and management

What is non-traditional security?

The paper addresses deforestation in Indonesia and the effects for the Asia-Pacific Region. First an overview is given on the concept of non-traditional security. Secondly, environmental security is defined in the context of the research as well as critique to the modern interpretation of this field of analysis. Causes of anthropogenic forest loss and its application to Indonesia places the phenomena in a global context. The impact on the regional environment finds expression in climate change and human security issues. Poverty, transnational migration, increased health risks, ecological imbalances and greenhouse effects are inferred from the corruption and cronyism charges of state officials and mismanagement of forest reserves. These factors are endangering environmental security cooperation in the region and suppressing sustainable development for future generations. The conclusion surveys the picture in retrospect and look at the main findings. DuPont (2001, p. 13) states that Security issues have traditionally been defined in military terms, yet the post Cold-War security landscape contains numerous non-military challenges to security. An emerging new class of non-military threats has the potential to destabilize East Asia and reverse decades of hard-won economic and social development. These transnational shifts must be grasped and dealt with by governments and non-government organizations both regionally, and internationally, if conflict is to be avoided. Transnational threats stem from overpopulation, deforestation, and pollution, global warming, unregulated population movements, transnational crime, virulent new strains of infectious diseases and a host of other issues not previously associated with international security. (DuPont, 2001, p. 13). Collectively they represent a new agenda that stretches our understanding of security and pose novel challenges for foreign and defence policy. The significance of environmental security (ES) extends far beyond the environmental sector as such. ES covers a wide range of subjects: Water scarcity, Air Pollution, Energy security, Deforestation, Natural and man-made disasters, Environment sustainability for meeting The Millennium Development Goals. Environmental degradation, resource depletion and natural disasters have direct implications for the security of individual States, group of States and of the international community as a whole. DuPont (2001, p.14) is further of the opinion that the impacts of environmental damage can pose a threat to either global security or to regional security. At the regional level, security may be threatened as a result of the unsustainable use of shared natural resources, or because of transboundary pollution. South Asia as a region is characterized by “extremely high environmental stress” resulting from “scarcity of water” “high urban population density” “energy shortages, “deforestation” “air pollution and “natural” and “man-made disasters.” The paper is divided into the following sections. First

The Environment and Security

Although the term 'environmental security' has firmly entrenched itself in the lexicon of international relations, there is considerable disagreement about its meaning and significance. In common with advocates of human security, many 'environmentalists' accept that security ought to extend beyond the boundaries of the state to include the individual as well as humanity in general, but others believe that environmental decline has an important security dimension mainly because it reduces state capacity.ⁱ Realists are less inclined to accept that there is a direct connection between the environment and security, or that the environment warrants inclusion on the core security agenda of the twenty-first century. If the definition of 'security' has been marked by controversy and contention, so too has that of the 'environment', which has been preceded by almost as many adjectives as 'security' and subject to a multitude of different interpretations. According to the definition of the environment as developed by (Sprout and Sprout, 1971, p. 24), the concept of biosphere embraces – 'that part of the planet where life exists, and upon which life depends for continued 'existence' – essentially the atmosphere, the surface and subsurface of the land and all bodies of water. Some ecologists share common ground with traditional strategists in rejecting the notion of environmental security, fearing that linking the two may lead to 'either a militarization of environmental politics or a demilitarization of security thinking'.ⁱⁱ Nevertheless, the use of the term 'environmental security' is now widely accepted and there is a significant body of cross-disciplinary research which explores the connections between environmental degradation, security and conflict. Since environmental degradation threatens the very survival of the planet, security ought to be redefined to include preserving and protecting the natural elements that sustain life. Renner contends that a 'reasonable definition of security needs to encompass breathable air and potable water, safety from toxic and radioactive hazards, an intact atmospheric ozone layer, a stable climatic system, and protection against the loss of the topsoil that assures us of our daily bread (as cited in Dalby, 1995, p. 187). 'Statists' by definition, have a more restricted, state-centric view. Ecological threats are important, statistes assert, because they can abrade national institutions and natural resources, leading to social and political instability and ultimately conflict – conflict that may be played out either between states or at the subnational level. (Buzan, 1991, p. 131). This particular conceptualization of the link between the environment and conflict now seems to be dominant in the literature, although there are several iterations which privilege different causal factors. (Ball, Viviani & Gamaut, 1993, p. 28) are of the opinion that environmental threats stems from sustained economic growth and the 'conflictual possibilities arising from a highly inter-dependent system in the throes of faltering or even declining real growth'. Others emphasize distributional issues stemming from environmental pressures on already stretched natural resources. (Hassan, 1991, p. 24). Lipschutz (1989, p. 138) takes the view that the strategic and foreign policy community needs to consider more seriously a range of non-military dangers to security arising from environmental disasters,

population growth (threats from rising worldwide demand), and growing resource scarcity (threats from the supply side). Skeptics contest the arguments of environmentalists on three grounds. First, they argue that it is misleading to conceive of environmental degradation as a threat to security since the traditional focus of national security is interstate or organized violence, which has little to do with environmental problems. There is a misfit between environmental well-being and national security from violence because of the differing degrees of intentions involved. Violence is normally a highly directed human activity and combating it has little in common with environmental degradation, which is largely unintentional and has multiple causes. Should environmental stress be seen as a security issue simply because people die or are dispossessed as a consequence of it? If so, then how can this view of the link between the environment and conflict be reconciled with disease and crime, which 'routinely destroy life' but are not considered security threats, just as natural disasters are not events that threaten national security. (Lipschutz & Holdren, 1989, p. 121.) Accordingly, attempts by environmentalists to redefine security more broadly only create conceptual muddle and 'sloppiness', resulting in a definition rather than a meaningful redefinition of security. In the words of Lothar Brock, (as cited in Gleditsch, 1997, p. 20), 'if everything is a security matter, then nothing is'. Second, critics of the environmental case assert that the nexus between resource scarcity and conflict is weakening because there has been considerable progress in developing substitutes for many essential raw materials, the robust character; the robust character of the world trade system is lessening the resource vulnerability of national economies; and acquiring resources through military force is less attractive than it once was due to changing norms of state behavior. (Lipschutz & Holdren, 1989, p. 131.) Third, there is a lack of hard evidence to support the thesis that environmental degradation causes significant conflict. The foundation on which much of the environmental case is built is made of sand – the 'evidence' is anecdotal, sparse or inconclusive. (Thomas, Homer-Dixon, 1991, p. 76) There is comparatively little information on the impact of environmental degradation on national and regional security. A commonly cited example is climate change. Since the scientific evidence documenting climate change is contested, the security effects of global warming are uncertain. Conflict may not necessarily follow and some of the outcomes of climate change may actually be positive. While reductions in rainfall may lead to desertification or water shortages in some regions, others will benefit from increased rainfall and higher crop yields. Even where the fabric of the state is torn by environmentally induced conflicts, in all likelihood they will be local and have negligible effects on world order – 'visions of starving millions from the 'South' invading the 'North' in search of food are farfetched. (Critchley & Terriff, 1993, p. 337).

Causes of anthropogenic deforestation

Bright (2000) states that the remnants of the great forests that once covered more than 40 percent of the earth's land surface are receding apace as a result of land clearance for agriculture and grazing, commercial logging, urbanization and pollution. Population growth is a root cause along with the vastly increased per capita

consumption of forest products such as paper and industrial round – wood. Even the use of fuel – wood and charcoal has risen by almost two – thirds between 1968 -1998. Nearly half of the world’s old – growth forests had been cleared by the end of the twentieth century. Over time, deforestation reduces the fertility of land, causing crop failures, food shortages and population movements. Aside from timber, forests contain a great diversity of products that both enrich and sustain life. Among the non – wood products traded internationally are nuts, oil and medicinal. Abramovitz, Ashley & Mattoon, (as cited in Worldwatch Institute, p. 60) state that deforestation also threatens biodiversity. They argue that although covering only 6 percent of the earth’s land surface, the tropical forests of Southeast Asia are estimated to contain between 70 and 90 percent of the planet’s animal and plant species. Forests play a crucial role in binding the ecology of the planet and protecting fragile soil s from temperature and rainfall extremes and in creating their own microclimates within their canopies. Removing trees often triggers a cycle of flooding and drought that ends in substantial soil erosion and sometimes desertification. (Hurst, 1991, p. 437). In East Asia deforestation is a major cause of soil erosion, farmland loss and poor water quality. Southeast Asia’s tropical forests are the most seriously affected but the region’s temperature and subtropical forests, particularly in China, are also under pressure. Almost 50 percent of Southeast Asia’s original forest cover has been destroyed. Kaji (1994, p. 212) quotes The Food and Agricultural Organization of the United Nations (FAO), as putting the annual rate of loss at around 1 percent and the World Bank estimates that forest cover in the wider East Asian region is being lost at about 1.4 percent per annum – a substantially higher loss than any other developing region of the world. Four main processes are responsible:

- slash–and-burn agricultural practices;
- commercial timber extraction, both legal and illegal;
- government-sponsored transmigration schemes which accelerate the rate of deforestation in the remaining areas of virgin forest land;
- large-scale development projects, such as mining operations and dam-building, which frequently require extensive forest clearance. (Hurst, 1991, p. 5).

Karen (2003) mentions multiple root causes of contemporary deforestation, including corruption of government institutions, the inequitable distribution of wealth and power, population growth and overpopulation, and urbanization. Globalization is often viewed as another root cause of deforestation, though there are cases in which the

impacts of globalization (new flows of labor, capital, commodities, and ideas) have promoted localized forest recovery. (Hecht, Kandel, Gomes, Cuellar & Rosa, 2006, p. 308). In 2000 the United Nations Food and Agriculture Organization (FAO) found that 'the role of population dynamics in a local setting may vary from decisive to negligible' and that deforestation can result from 'a combination of population pressure and stagnating economic, social and technological conditions.' (Marcoux, 2000). According to the United Nations Framework Convention on Climate Change (UNFCCC, 2007) secretariat, the overwhelming direct cause of deforestation is agriculture. Subsistence farming is responsible for 48% of deforestation; commercial agriculture is responsible for 32% of deforestation; logging is responsible for 14% of deforestation and fuel wood removals make up 5% of deforestation. The degradation of forest ecosystems has also been traced to economic incentives that make forest conversion appear more profitable than forest conservation, as emphasized by Pearce (2001, p. 284). Many important forest functions have no markets, and hence, no economic value that is readily apparent to the forests' owners or the communities that rely on forests for their well-being. From the perspective of the developing world, the benefits of forest as carbon sinks or biodiversity reserves go primarily to richer developed nations and there is insufficient compensation for these services. Developing countries feel that some countries in the developed world, such as the United States of America, cut down their forests centuries ago and benefited greatly from this deforestation, and that it is hypocritical to deny developing countries the same opportunities: that the poor shouldn't have to bear the cost of preservation when the rich created the problem. (Bulte, Joenje & Jansen, 2001).

Angelsen & Kaimowitz (1999, p. 73) do not agree on whether industrial logging is an important contributor to global deforestation. Similarly, there is no consensus on whether poverty is important in deforestation. Some argue that poor people are more likely to clear forest because they have no alternatives, others that the poor lack the ability to pay for the materials and labour needed to clear forest. Claims that population growth drives deforestation have been disputed; one study found that population increases due to high fertility rates were a primary driver of tropical deforestation in only 8% of cases. (Geist & Lambin, 2002, p. 143). Some commentators have noted a shift in the drivers of deforestation over the past 30 years. Whereas deforestation was primarily driven by subsistence activities and government-sponsored development projects like transmigration (Indonesia) and colonization (Latin America) in the 1960s and 1970s, by the 1990s the majority of deforestation was caused by industrial actors, including extractive industries, large-scale cattle ranching, and extensive agriculture, according to the (IPCC Fourth Assessment Report, 2007, Section 7.3.3.1.5., p. 527).

Getting to the roots of deforestation in Indonesia.

Map 1: Forest Reserves in Indonesia



Control and Management

All of Indonesia's natural forests are owned and administered by the state. The Ministry of Forestry's (MOF) role is to wisely utilize the resources of the forest so as to recognize the multiple functions of forests and achieve intergenerational equity. Since 1999, Indonesian forest management and utilization have been restructured with a shift from timber-based to resource-based management. In parallel, greater focus is also given to empowerment of local communities, decentralization and strengthening the role of research and education. The MOF is also reviewing several policies to make them more compatible with sustainable forestry management principles, notably the Act on Basic Provisions for Forestry and the concept of people's participation in forest management. (The Ministry of Forestry Indonesia 2009).

Jakarta has permitted up to 50 percent more logging than can be sustained in the medium term. (Eberstadt, 2009). During the Suharto era, a large proportion of the proceeds from illegal logging were siphoned off by Suharto cronies, the military, and a graft-ridden bureaucracy. Unfortunately, the devastation of Indonesia's primary forests has worsened since Suharto's departure because of Indonesia's still parlous economic situation and the wood industry's crucial role as major employer and supplier of foreign exchange. Indonesia's 120 million-hectare forests are shrinking at a rate of 1.5 million hectares a year and illegal logging already exceeds the legal cut. In 1999, wood products earned Indonesia \$8.5 billion and processing of timber and forests employed 5 million

people. This dramatically underlines the dilemma faced by those Southeast Asian governments that are heavily dependent on timber exports, as noted by De Soysa & Gleditsch (1999, p. 35). Curtailing or reducing logging in the face of entrenched interests, particularly during periods of high unemployment, risks a political and social backlash that could trigger civil strife. Failure to curb illegal logging, on the other hand, incurs the wrath of influential environmental groups and financial donors and ultimately threatens the sustainability of the whole timber industry. At present rates, tropical rainforests in Indonesia would be logged out in 10 years, Papua New Guinea in 13 to 16 years. (Asia News Online, March 24, 2008). In Sumatra tens of thousands of square kilometers of forest have been cleared often under the command of the central government in Jakarta who comply with multi-national companies to remove the forest because of the need to pay off international debt obligations and to develop economically. (BBC News Online, August 3, 2007). In Kalimantan, between 1991 and 1999 large areas of the forest were burned because of uncontrollable fire causing atmospheric pollution across South-East Asia. (<http://news.mongabay.com/2006/1015-indonesia.html>). The Indonesia-UK Tropical Forestry Management Program (ITFMP), report no. EC//99/03 states that agricultural development programs in Indonesia (transmigration program) moved large populations into the rainforest zone, further increasing deforestation rates. A joint UK-Indonesian study of the timber industry in Indonesia in 1998 suggested that about 40% of throughout was illegal, with a value in excess of \$365 million. More recent estimates, comparing legal harvesting against known domestic consumption plus exports, suggest that 88% of logging in the country is illegal in some way. (Greenpeace 2003, Partners in Crime Report). Malaysia is the key transit country for illegal wood products from Indonesia. Logging and the burning of forests to clear land for cultivation has made Indonesia, a relatively undeveloped country, the world's third largest emitter of greenhouse gases, behind only China and the United States. (The Washington Post, November 19, 2009, p. 9). Forest fires often destroy high capacity carbon sinks, including old-growth rainforest and peatlands.

Efforts to curb global climate change have included measures designed to monitor the progression of deforestation in Indonesia and incentivize national and local governments to halt it. This economic insight has led the UN to establish UN-REDD (Reducing Emissions from Deforestation and Forest Degradation in Developing Countries), a program that helps countries prepare for an eventual direct compensation scheme for forest conservation. REDD stands for Reducing Emissions from Deforestation and Forest Degradation (REDD).ⁱⁱⁱ REDD is a set of steps or mechanism designed to use market/financial incentives in order to reduce the emissions of greenhouse gases from deforestation and forest degradation. Its original objective is to reduce green house gases but it can deliver 'co-benefits' such as biodiversity conservation and poverty alleviation. According to Varghese (2009), REDD credits offer the opportunity to utilize funding from developed countries to reduce deforestation in developing countries. 'Reducing emissions from deforestation and forest degradation' implies a distinction between the two activities. The process of identifying the two is what raises questions about how to measure each within the REDD mechanism, therefore their distinction is

vital. Deforestation is the permanent removal of forests and withdrawal of land from forest use. Forest degradation refers to negative changes in the forest area that limit its production capacity. Myers (2007) estimates that in recent figures for deforestation and forest degradation were shown to account for 20-25% of greenhouse gas emissions, higher than the transportation sector. Recent work shows that the combined contribution of deforestation, forest degradation and peatland emissions accounts for about 15% of greenhouse gas emissions, about the same as the transportation sector. (Van der Werf, Morton, DeFries, Olivier, Kasibhatla, Jackson, Collatz & Randerson, 2009, p. 737). Even with these new numbers it is increasingly accepted that mitigation of global warming will not be achieved without the inclusion of forests in an international regime. As a result, it is expected to play a crucial role as a future successor to the Kyoto Protocol. (Butler, 2009, p. 2). One cause is global demand for wood pulp and palm oil, and the resulting clearance of forests for plantations. Palm oil is now considered as a major source of income for Indonesia and for more than 3.5 million people working in this sub-sector. But this expansion is coming at a heavy price. Where plantations are created in areas of high conservation value forests (HCVF), this has led to the complete loss of forest ecological functions and socioeconomic benefits for local people. Major international organizations, including the United Nations and the World Bank, have begun to develop programs aimed at curbing deforestation. Funding has been an issue, but at the UN Framework Convention on Climate Change (UNFCCC) Conference of the Parties-15 (COP-15) in Copenhagen in December 2009, an accord was reached with a collective commitment by developed countries for new and additional resources, including forestry and investments through international institutions, that will approach USD 30 billion for the period 2010 - 2012. (New York Times, April 20, 2009, p. 4.) Significant work is underway on tools for use in monitoring developing country adherence to their agreed REDDS targets.

Forest Managing for Action (FORMA) is designed to facilitate forest conservation by identifying where - and when - deforestation has occurred on a monthly basis. This information makes it easier to know where to intervene to stop the spread of deforestation, and is intended to complement national forest monitoring programs and local forest conservation efforts. The first phase of the FORMA system shows the spread of deforestation in Indonesia from 2000 to October 2009, producing monthly time-lapse images from December 2005 to October 2009. In future phases, FORMA will be extended to other tropical forest countries. FORMA identifies deforestation by analyzing publicly available satellite data from NASA and other public and academic institutions. In particular, it relies on changes in "greenness" and telltale patterns of fires detected by satellite that are indicative of deforestation. (New York Times, April 20, 2009, p. 4). A study by the World Rainforest Movement (1998) concluded that deforestation in Indonesia has the following underlying causes;

- Development paradigm adapted by government of Indonesia influenced by structural adjustment loans, bilateral and multilateral loans.

- International and regional trade pressures.
- Economic growth development paradigm under depleted natural resources

Regional Environmental Effects

The effects from forest loss have been widespread, including irregular river flows, soil erosion, and reduced yield from forest products. Pollution from chlorine bleach used in pulp bleaching and run-off from mines has damaged river systems and adjacent cropland, while wildlife poaching has reduced populations of several conspicuous species including the orangutan (endangered), Bali and Javan tigers (extinct), and Javan and Sumatran rhinos (on the brink of extinction). On the island of New Guinea (Irian Jaya) the world's only tropical glacier is receding due to climate change, but also due to the local effects of mining and deforestation. (Sunderlin & Resosudarmo, 2007). Logging for tropical timbers and pulpwood is the best-known cause of forest loss and degradation in the country. Indonesia is the world's largest exporter of tropical timber, generating upwards of US\$5 billion annually, and more than 48 million hectares (55 percent of the country's remaining forests) are concessioned for logging. Logging in Indonesia has opened some of the most remote, forbidding places on earth to development. After decimating much of the forests in less remote locations, timber firms have stepped up practices on the island of Borneo and the state of Irian Jaya on New Guinea, where great swaths of forests have been cleared in recent years and logging firms have to move deeper and deeper into the interior to find suitable trees. For example, in the mid-1990s, only 7 percent of Indonesia's logging concessions were located in Irian Jaya, but today more than 20 percent exist in the territory. (Sunderlin & Resosudarmo, 2007). In Indonesia, powerful families allied with government rulers control large and highly valuable timber concessions. These forests are being rapidly liquidated, at enormous profit. (Global Deforestation, 2006).

Legal timber harvesting affects 700,000-850,000 hectares of forest per year in Indonesia, but widespread illegal logging boosts the overall logged area to at least 1.2-1.4 million hectares and possibly much higher—in 2004, Environment Minister Nabel Makarim said that 75 percent of logging in Indonesia is illegal. Despite an official ban on the export of raw logs from Indonesia, timber is regularly smuggled to Malaysia, Singapore, and other Asian countries. By some estimates, Indonesia is losing around \$1 billion a year in tax revenue from the illicit trade. Illegal cutting is also hurting legitimate timber-harvesting businesses by reducing the supply of logs available for processing, and undercutting international prices for wood and wood products. (Jurgens, 2006, p. 11).

While clear-cutting virgin rainforest is illegal in Indonesia and oil-palm plantations can be planted on degraded forest lands, forest clearing is permissible as long as the process is declared to be the first step in establishing a plantation. Thus oil-palm

plantations often replace natural forests. Of particular concern to forest watchers is a 2-million-hectare project planned for central Kalimantan on the island of Borneo. Jurgens (2006, p. 12) is of the opinion that the plan—funded by China and supported by the Indonesian government—has been widely criticized by environmental groups who say that the conversion of natural forest for monocultures of palm trees threatens biodiversity and ecological services. The World Wildlife Fund, which has been particularly vocal in condemning the scheme and has a number of scientists on the ground assessing the potentially affected region, has issued several reports on the region's biological diversity (361 new species were discovered between 1994 and 2004 in Borneo). (Zobor, 2007)

Pye-Smith (2008) concludes that the fastest and cheapest way to clear new land for plantations is by burning. Every year hundreds of thousands of acres hectares go up in smoke as developers and agriculturalists feverishly light fires before monsoon rains begin to fall. In dry years—especially during strong el Niño years—these fires can burn out of control for months on end, creating deadly pollution that affects neighboring countries and causes political tempers to flare. In 1982-1983 more than 9.1 million acres (3.7 million ha) burned on the island of Borneo before monsoon rains arrived, while more than 2 million hectares of forest and scrub land burned during the 1997-1998 el Niño event, causing \$9.3 billion in losses. The fires also produced wide-ranging and severe economic, political, social, health, and ecological damage to Indonesia and the neighboring Southeast Asian nations of Singapore, Brunei, Malaysia, and Thailand, already in the midst of an economic crisis. Satellite analysis of the 1997-1998 fires revealed that 80 percent of the fires could be linked to plantations or logging concession holders. The haze from the 2005-2006 fires resulted in heated exchanges between Indonesian and Malaysian government officials. Malaysia and Singapore have offered assistance in fighting Indonesian blazes, while simultaneously placing blame on the country for its lack of progress in controlling the wild fires. Indonesia in turn blamed Malaysian firms for rampant illegal logging in the country, which left its forests more susceptible to conflagrations. (Pye-Smith, 2008). Despite some protective measures, including an Indonesian proposal to implement the death penalty for illegal loggers and fire starters, such fires are only expected to worsen in the future as the region's forests face increasingly dry conditions due to climate change and degradation. Fires in Indonesia's peat swamps are particularly damaging due to the high carbon content of the ecosystem—Dr Susan Page, of the University of Leicester, estimates that Southeast Asian peat lands may contain up to 21 percent of the world's land-based carbon. The 1997 fires released 2.67 billion tons of carbon dioxide into the atmosphere. (Pye-Smith, 2008).

Cronyism and Corruption

Forest management in Indonesia has long been plagued by corruption. (Lang,

2009). Underpaid government officials combined with the prevalence of disreputable businessmen and shifty politicians, mean logging bans go unenforced, trafficking in endangered species is overlooked, environmental regulations are ignored, parks are used as timber farms, and fines and prison sentences never come to pass. Corruption was cemented in place under the rule of ex-president General Haji Mohammad Soeharto (Suharto), who gained control in 1967 after participating in a 1965 seizure of power by the military. Under his rule, cronyism was rife, and many of his close relatives and associates built up tremendous wealth through subsidies and unfair business practices. Lang (2009) states that the tradition of crony capitalism played an important role in the government's poor response to forest fires during the 1997-1998 crisis. Blustein and Richburg (1998, p. 1) contends that according to the IMF's managing director, Indonesia was unable to use its special off-budget reforestation fund to help combat the fires because the money had been ear-marked for a failing car project owned by Suharto's son. Though the fund contained billions drawn from timber taxes, it has long been used as a convenient way to distribute wealth back to Indonesia's circle of economic elite, the bedfellows of the former strongman. The IMF said that the fund has mostly been used to provide low-interest loans to commercial timber and plantation companies for land clearing and replanting virgin rainforest with fast-growing pine, eucalyptus, and acacia trees for pulp production. (Blustein & Richburg, 1998). Markar (2007) quotes the Berlin-based Transparency International (TI): 'in countries where excessive corruption prevails, the destruction of natural resources, such as local forests, for private gain is not far behind'. 'Illegal logging is a symptom of the disease of corruption,' says Lisa Elges, as quoted by Markar (2007). Elges also says that 'in countries where deforestation is predominant, corruption is very high'. What has fuelled such abuse is the political climate that shrouds the forestry sector in the region. 'There is a great deal of lack of accountability and transparency in the forestry sector. Forests are held under the authority of governments, so there is no one to check the abuse by relevant ministries, politicians and local officials', according to Elges (as cited by Markar, 2007). The TI single out Indonesia as a country where it is estimated that "90 percent of logging is illegal" to another view that "80 of deforestation in the region is because of illegal logging and corruption.' What is more, FAO officials admit that Asian countries appear unaware of this investment trend, where foreign funds are directed towards large timber plantations to supply the world's demand for wood products. "At the senior level where forest policy is discussed, there is little awareness of the large amounts of capital out there for forestry," says Patrick Durst, FAO's senior forestry officer for Asia and the Pacific, as quoted by Markar (2007). But he conceded in an IPS interview that forest plantations will always be up against 'complicated situations in Asia,' given the demand for land, the problems of ownership of land and population density. 'In almost all Asian countries, the governments claim ownership and tenure of forest lands.' In Indonesia, for instance, 'most of the companies involved in forest plantations are from Indonesia,' says Durst. 'They look at the overall governance issues and the difficulties with corruption differently.'

Threats

Indonesian forests are currently affected by a number of significant threats, according to the Global Forestry Resource Assessment (FAO) Paper 147 (2005, p. 1). Deforestation between 1985 and 1997 was around 1.8 million hectares /annum and the current rate is believed to be significantly higher than this. Between 1985 and 1998, the ratio of forest area to total land area fell from 62.7% to 50.6%. Most of the forest cover loss has been in dry lowlands, the areas considered most valuable for commercial logging and biodiversity conservation. The remaining forests are degrading in terms of commercial timber value, biodiversity and other forest products. All types of forests are affected - production, protection and even conservation areas. In most cases, deforestation and forest degradation are caused by illegal activities. These include over-cutting of forests, cutting in unauthorized areas and outright theft. Illegal logs are smuggled to neighbouring countries without paying fees, contributions or tax, and then re-exported back to Indonesia. (FAO paper 147, p. 2). Extensive illegal logging networks operate at the district level and illegal logging has been estimated to account for 40-60 percent of the total industrial round wood supply. The situation is strongly related to the fact that wood-processing capacity far exceeds the sustainable harvest from natural forests which threatens not only the forests but also the forest industry. Encouraged by the government, Indonesian pulp and paper producers have spent US\$ 12 billion to expand processing capacity 7-fold since the late 1980s. Development of pulpwood plantations has not kept pace and much of the wood has come from clear-cutting. During 2000 and 2005, the UN Food and Agriculture Organization estimate that Indonesia lost a massive 1, 87 million ha of forest every year. That's 9, 36 million ha over a 5-year period – an area the size of Portugal. When a forest area of that size is lost, this carries a range of serious impacts, including (among many other):

- habitat loss for endangered species such as the Sumatran rhino and orangutans
- loss of livelihoods for forest people who are robbed of their timber resources and
- loss of revenue for local and central governments. (FAO paper 147, pp. 4-8).

Garrett (2007) observed that the Asia-Pacific region is at the frontline of climate change. He warns that the impact of climate change, particularly through rising sea levels, could lead to the submergence of tiny atolls and the inundation of low lying land in the southwest Pacific. By 2050, up to 150 million people may be displaced. Several countries are already grappling with these effects now. What has fuelled such abuse is the political climate that shrouds the forestry sector in the region, she explained to IPS in this northern Thai city, where a conference on the future of forests in Asia and the Pacific was held last week. 'There is a great deal of lack of accountability and

transparency in the forestry sector. Forests are held under the authority of governments, so there is no one to check the abuse by relevant ministries, politicians and local officials.' A report by Global Forest Watch (2007) marks that deforestation in Indonesia is largely the result of a corrupt political and economic system that regarded natural resources, especially forests, as a source of revenue to be exploited for political ends and personal gain. The report notes that the Indonesian Government is facing mounting pressure domestically and internationally to take action, but progress is slow and not all policy reforms in process are necessarily good news for forests. Indonesia support cutting green house emissions by 5 percent below the 1990 levels by 2008-2012. The Environment Minister, Rachmat Witoelar as quoted by Arga (2007) said that reduced emissions from deforestation have to enter the agenda so that developing nations such as Indonesia can benefit. 'Indonesia will benefit from the carbon trade. Almost 85 percent of emissions come from land use change, which includes deforestation,' Witoelar said. Indonesia is among the world's top three greenhouse gas emitters because of deforestation, peatland degradation and forest fires, according to a recent report sponsored by the World Bank and Britain's development arm. (Arga 2007) The report says forestry and land use change are estimated to account for a staggering 2.563 billion metric tons of Indonesia's yearly carbon dioxide emissions. Witoelar acknowledged that Indonesia was a big emitter, but questioned international research saying it is the third largest emitter of greenhouse gases after the United States and China. 'I understand we are classified as a big emitter yet we are not the third biggest.' Witoelar said 'avoided deforestation' or REDD could attract massive funds and the new carbon trading scheme will allow the smooth mass transfer of funds from developed nations to beneficiaries.' (Arga 2007). Indonesian President Susilo Bambang Yudhoyono (SBY), elected in 2004 and re-elected this year, gets widespread credit for leading the fight against deforestation. Like his recent predecessors, Yudhoyono pledged to preserve Indonesia's rainforests. Unlike them, he's taken strong steps to keep his promise, starting with Operation Sustainable Forestry, launched in 2005. (Cohen 2009). Indonesia has cooperated with many countries to overcome environmental problems. Dozens of countries and groups have supported the government by providing assistance. Executive director of the Indonesian Forum on the Environment, Chalid Muhammad said he hoped the government would become more critical toward developed countries, and added it also needed to raise its voice about gas emissions produced by those countries, which contributed the greatest amount worldwide, as quoted in the (Jakarta Post Online, August 28, 2007). Japan, Britain, Germany, the U.S. and Canada are five largest producers of carbon dioxide emissions. Muhammad said Indonesia has to force those countries to lower their emissions as well as increase our efforts to combat deforestation. Don't let them think that we won't criticize them because they support us financially. Global warming has become our common enemy, Muhammad said. The World Health Organization's (WHO) country report on Indonesia (2009) estimates that climate change has directly or indirectly killed more than one million people globally since 2000, with more than half of those deaths occurring in the Asia-Pacific, the world's most populous region. These figures do not include deaths linked to urban air pollution, which kills around 800,000 people worldwide annually. Is the Asia-Pacific going to drown in disaster?

World Vision for the Asia-Pacific (2009) states that the negative effects of climate change are becoming more evident for poor communities forced to live in marginalized locations, which are frequently in areas most vulnerable to natural disasters. It is estimated that approximately 175 million children will be affected by climate change induced natural disasters every year over the next decade. Malaria – which currently claims the lives of around 800,000 children every year – could become more common if temperature and rainfall weather patterns change. The number of children dying each year due to the effects of malnutrition – currently 3.5 million – is likely to increase as a result of climate change. Governments, communities and humanitarian agencies need to act now to help children and their communities find new ways of living in this rapidly changing world. Climate change in urban environments means that children living in overcrowded, sprawling slum settlements with poorly built infrastructure and limited access to health care will become more vulnerable than ever before. In the rural environments, poor crops yields, decreased water and arable land resources combined with extreme weather patterns of drought and flooding is creating food insecurity and rising costs of living. (World Vision for the Asia-Pacific, 2009). A report by the S. Rajaratnam School of International Studies, Nanyang Technological University, Singapore (2009) refers to the sub-regional frameworks being developed, which highlight the need to operate between and across different levels of government and other actors to provide responsible governance in addressing climate change. This includes the Three Countries, One Vision document which was announced in 2007 in Bali, Indonesia which develops a mechanism for collaboration and cooperation in the management of the Heart of Borneo, and a Regional Plan of Action for the next decade, launched at the World Ocean Conference in Manado, Indonesia in 2009 by the six Coral Triangle Governments.

Conclusion

On the surface, Indonesia's environmental problems – deforestation, wildlife trade, pollution, overfishing etc – and vanishing natural resources appear to be issues of poverty, population pressure and poor governance. In reality, the situation is more complex. Across the world, a growing appetite for Indonesia's fish, oil palm, timber, wood pulp, gold, oil and gas resources are pressing the country to keep on exporting its natural heritage in the form of oils, logs, fish fillets and photocopy paper. The problem is that a lot of these activities are taking place illegally and/or are carried out in an unsustainable way. Indonesia's forests face a discouragingly grim future. While the country has nearly 400 protected areas, the sanctity of these reserves is virtually nonexistent. With its wildlife, forests, coral reefs, cultural attractions, and warm seas, Indonesia has tremendous potential for eco-tourism, but to date most tourism is focused on cheap beach holidays. Sex tourism is a problem in parts of the country, and tourism itself has caused social issues and environmental problems from forest clearing, mangrove development, pollution, and resort construction. The understanding of climate change has evolved from it being perceived as a purely 'environmental' issue to a

moral issue that has far reaching impacts on national security, foreign policy and development policy, because it will severely exacerbate poverty. Climate change is a mega-challenge that requires world governments to respond, and in doing so, to prioritize the impact on the poor. It is essential that significant and dependable funds are made available for adaptation and mitigation in developing countries. The solution requires collective action on behalf of the world towards sustainable development, energy security, food security and the health and well-being of children.

End Notes

The term 'environmentalists' is used here not in its general sense but rather to denote those who share the view that there is a discrete and important environmental dimension to security which has been neglected in the traditional security literature.

² Disciples of 'securing the environment' are generally suspicious of the motives of security specialists in entering the debate on the environment. These interventions have been characterized as a dangerous reinforcement and legitimation of a 'militaristic mindset' and a barrier to the development of an effective response to environmental decline. On this point see Lorraine Elliot, *The Global Politics of the Environment* (New York University Press, New York, 1998): 219.

³ <http://news.mongabay.com/2007/1215-redd.html>

References

Abramovitz, J.N. & Mattoon, A. (1999). 'Reorienting the Forest Products Economy.' In Worldwatch Institute, *State of the World*. New York: Norton,

Angelsen, A. & Kaimowitz, D. (1999). 'Rethinking the causes of deforestation: Lessons from economic models'. *The World Bank Research Observer*, 14, 1.

Arga, A. (2007). 'Indonesia wants deforestation in a new climate deal', <http://www.reuters.com/article/idUSJAK20827320070629>

'Bali Delegates Agree to Support Forests-For-Climate (REDD)'. (2007). December 17, <http://news.mongabay.com/2007/1215-redd.html>.

Ball, D. Viviani, N.& Garnaut, R. (1993). 'Economics and Security: Towards Greater Cooperation in the Asia-Pacific Region', paper prepared for the Conference on the

Asia-Pacific Region: Links Between Economics and Security Relations, *Institute on Global Conflict and Cooperation*, University of California, San Diego, 13-15, 28.

Blustein, P. & Richburg, K. B. (1998, February 17) 'IMF Effort Not Working, Suharto Tells Clinton', *Washington Post*, p. 1.

Bright, C. (2000). 'Environmental Surprises: Planning for the Unexpected', *Futurist* (July – August), 43.

Bulte, E. H., Joenje, M., Jansen, H.G.P. (2000). 'Is there too much or too little natural forest in the Atlantic Zone of Costa Rica?'. *Canadian Journal of Forest Research*; 30 (3), 495–506.

Butler, R. (2009). 'Big REDD'. *Washington Monthly* 41, 2.

Buzan, B. (1991). *People, States and Fear: An Agenda for International Security Studies in the Post-Cold War Era* (Harvester Wheatsheaf, London), 131.

Climate insecurities, Human Security and Social Resilience. (2009). Report on a conference organized by the RSIS Centre for Non-Traditional (NTS) Security Studies at the S. Rajaratnam School of International Studies (RSIS), Nanyang Technological University, Singapore.

http://www.rsis.edu.sg/nts/resources/policy_briefs_and_reports/NTS_Climate%20Conference%20Report_201109.pdf

Cohen, M. (2009). 'In a haze, Indonesia slows deforestation', http://www.atimes.com/atimes/Southeast_Asia/KI26Ae01.html

Dalby, S. (1995). 'Security, Intelligence, the National Interest and the Global Environment', *Intelligence and National Security* 10 (4), 187.

'China is black hole of Asia's deforestation', Asia News Online 2008, March 24, <http://www.asianews.it/index.php?l=en&art=5728>

De Soysa, I. & Gleditsch, N.P. (1999). 'To Cultivate Peace: Agriculture in a World of Conflict', PRIO Report 1/99 International Peace Research Institute, Oslo.

Eberstadt, N. (2009). 'Six Billions Reasons to Cheer', <http://www.aei.org/article/10871>

Environmental Investigation Agency and Telepak (2004) Profiting from Plunder: How Malaysia Smuggles Endangered Wood, *The Washington Post*, November 19, 2009, p. 9.

'Forest fires result from government failure in Indonesia', available at <http://news.mongabay.com/2006/1015-indonesia.html>

Garrett, P. (2007). 'More must be done to tackle deforestation', <http://www.petergarrett.com.au/436.aspx>

Geist, H.J. & Lambin, E.F. (2000). 'Proximate Causes and Underlying Driving Forces of Tropical Deforestation'. *BioScience*, 52 (2), 143–150.

Gleditsch, Nils. P. (ed). (1997). *Conflict and the Environment* Kluwer Academic.

Global Forest Resource Assessment (FAO). (2005). Forestry Paper 147. pp. 1-8. <http://www.fao.org/forestry/foris/data/fra2005/kf/common/GlobalForestA4-ENsmall.pdf>
(accessed January 22, 2009)

Global Forest Watch (2007) 'Indonesia's Forests in Brief', <http://www.globalforestwatch.org/english/indonesia/forests.htm>

Global Deforestation. (2006). <http://www.globalchange.umich.edu/globalchange2/current/lectures/deforest/deforest.html>

Greenpeace. (2003) Partners in Crime: A Greenpeace investigation of the links between the UK and Indonesia's timber barons, <http://www.saveordelete.com>

Hurst, P. (1991). *Rainforest Politics: Ecological Destruction in Southeast Asia* S. Abdul Majeed & Co, Kuala Lumpur.

Hassan, S. (1991). 'Environmental Issues and Security in South Asia', Adelphi Paper no. 262 *International Institute of Strategic Studies*, London, 24.

Hecht, S.B. Kandel, S. Gomes, I. Cuellar, N. & Rosa, H. (2006). 'Globalization, Forest Resurgence, and Environmental Politics in El Salvador'. *World Development* 34 (2), 308–323.

Indonesia-UK Tropical Forestry Management Program (1999) Illegal Logging in Indonesia. ITFMP Report No. EC/99/03

IPCC Fourth Assessment Report, Working Group I Report 'The Physical Science Basis', Section 7.3.3.1.5 (p. 527).

<http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-chapter7.pdf>

Jurgens, E (2006) 'Learning lessons to promote certification and combat illegal logging in Indonesia: September 2003 to June 2006'. *Center for International Forestry Research* (CIFOR), Bogor, Indonesia.

Lang, C. (2009). 'Wild Money: corruption, illegal logging and carbon offsets in Indonesia', <http://redapes.org/deforestation-palm-oil/wild-money-corruption-illegal-logging-and-carbon-offsets-in-indonesia/>

Lipschutz, R. (1989). *When Nations Clash: Raw Materials, Ideology and Foreign Policy* Ballinger, Cambridge, Mass.

Lipschutz, R. & Holdren, J.P. (1990). 'Crossing Borders: Resource Flows, the Global Environment, and International Security', *Bulletin of Peace Proposals* 2 (2), 121.

'Losing land to palm oil in Kalimantan', BBC News Online, 2007, August 3, <http://news.bbc.co.uk/2/hi/asia-pacific/6927890.stm>

Kaji, G. (1994). 'Challenges to the East Asian Environment', *Pacific Review* 7 (2), 212.

Karen. 'Paper presented at the annual meeting of the American Sociological Association, Atlanta Hilton Hotel, Atlanta, GA, Aug 16, 2003.

http://www.allacademic.com/meta/p_mla_apa_research_citation/1/0/7/4/8/p107488_index.html.

Retrieved May 13, 2009.

Pye-Smith, C. (2008) 'Indonesia burning', <http://www.cifor.cgiar.org/Publications/Corporate/NewsOnline/NewsOnline33/indonesia.htm>

Markar, M. M. (2007). 'Deforestation: Symptomatic of Corrupt Regimes',
<http://www.ipsnews.net/news.asp?idnews=39742>

Marcoux, A. (2000). 'Population and deforestation'. SD Dimensions. Sustainable
Development
Department, Food and Agriculture Organization of the United Nations (FAO).
<http://www.fao.org/sd/WPdirect/WPan0050.htm>.

Myers, E.C. (2007). 'Policies to Reduce Emissions from Deforestation and Degradation
(REDD) in Tropical Forests',
<http://www.rff.org/Publications/Pages/PublicationDetails.aspx?PublicationID=17519>.

Pearce, D. W. (2001). 'The Economic Value of Forest Ecosystems'. *Ecosystem Health*, 7
(4), 284-296.

Schultz, R. Godson, R. & Greenwood, T. (eds). (1990). *Security Studies for the 1990s*
Brassey's, New York.

Sprout, H. & Sprout, M. (1972) *Toward a Politics of the Planet Earth* Van Nostrand
Reinhold, London.

Sunderlin, W. D. & Resosudarmo I. A. (2007) 'Rate and Causes of Deforestation in
Indonesia: Towards a Resolution of the Ambiguities'
<http://www.cifor.cgiar.org/publications/html/occpaper9/chapter2.html>

Thomas, H. D. (1991). 'On the Threshold: Environmental Changes as Causes of Acute
Conflict,' *International Security*, 16, (2), 76.

UNFCCC (2007). 'Investment and financial flows to address climate change'. unfccc.int.
UNFCCC. pp. 81.
http://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/pub_07_financial_flows.pdf.

'Use Energy, Get Rich and Save the Planet', (2009, April 20). *The New York Times*, p. 4.

Van der Werf, G.R., Morton, R.S., DeFries, D.C.J., Olivier, P. S., Kasibhatla, R. B., Jackson,
G. J., Collatz,

J. & Randerson, J.T. (2009). 'CO2 emissions from forest loss'. *Nature Geoscience*, 37-738.

Varghese, P. (2009). 'An Overview of REDD',
http://www.rightsandresources.org/documents/files/doc_1220.pdf.

World Health Organization. (2009). 'WHO Indonesia',
http://www.ino.searo.who.int/EN/Section4/Section14_141.htm

World Rainforest Movement. (1998). 'Underlying Causes of Deforestation in Indonesia',
<http://www.wrm.org.uy/about/portadaEnglish.htm>

World Vision: Asia-Pacific. (2009). 'Climate Change: What's the Solution?',
<http://www.wvasiapacific.org/climatechange/whats-the-situation.html>

Zobor, K. G. (2007). 'WWF Welcomes Government Support for Conservation of Indonesia's Forests',
<http://www.worldwildlife.org/who/media/press/2007/WWFPresitem995.html>