

## Promoting Environmental Security and Poverty Alleviation in the Mekong Delta

### IES EnviroSecurity Assessments

A major proportion of the world's ecosystems and the services they perform for society and nature is being degraded or used unsustainably. This process affects human wellbeing in several ways. The growing scarcity of natural resources creates a growing risk for human and political conflicts and hinders sustainable economic development. Situations involving resource abundance can also be related to serious environmental degradation, increased community health risks, crime and corruption, threats to human rights and violent conflicts. Therefore, sound management of natural resources is crucial to ensure stability and security.

The overall objective of IES EnviroSecurity Assessments is to help secure the natural resource livelihood basis on the local, regional and international level. IES pursues this objective along the following mutually related lines: (1) the conservation of ecosystems and their related services, (2) the implementation of the international legal order, (3) the provision of economic incentives for maintenance of ecosystem services, and (4) empowerment of relevant actors and dissemination of results.

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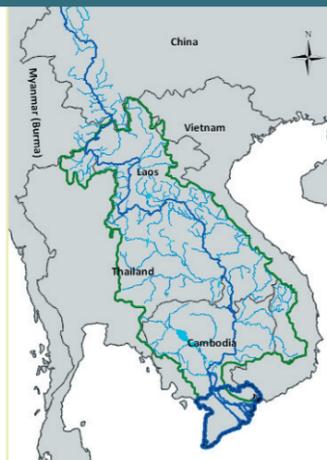
The Institute for Environmental Security (IES) is an international non-profit non-governmental organisation established in 2002 in The Hague, The Netherlands with liaison offices in Brussels, London and Washington, D.C.

The Institute's mission is: "To advance global environmental security by promoting the maintenance of the regenerative capacity of life-supporting ecosystems." The multidisciplinary work programme Environmental Security for Poverty Alleviation (ESPA) integrates the fields of science, diplomacy, law, finance and education and is designed to provide policymakers with a methodology to tackle environmental security risks in time, in order to safeguard essential conditions for sustainable development.

Key objectives of the ESPA programme are:

- **SCIENCE:** Create enhanced decision tools for policy makers, donors and their target groups on regional, national and local levels;
- **DIPLOMACY:** Promote effective linkages between environment, security and sustainable development policies;
- **LAW:** Contribute to the development of a more effective system of international law and governance;
- **FINANCE:** Introduce new and innovative financial mechanisms for the maintenance of the globe's life supporting ecosystems;
- **EDUCATION:** Build the environmental knowledge capital of people and organisations.

IES' mission and programme should be seen in the context of promoting international sustainable development goals and as a contribution towards long-term poverty alleviation.



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### SCIENCE AND INNOVATION

**1. Shrimp farming:** It is recommended to boost shrimp farming research in the Nam Can District, with a focus on improving the sustainability of industrial shrimp farming. The sustainability impacts and potential wider applicability of other, more sustainable methods of shrimp farming such as ecological shrimp farming, mangrove friendly aquaculture and closed-system shrimp farming, should be investigated.

**2. Alternatives:** As international demand for shrimps is not guaranteed, and the vulnerability of Nam Can to the effects of climate change is high, diversifying the economy would have many advantages. It would spread the risk of economic failure, provide new opportunities for employment and allow for the maintenance of natural habitats. The potential of alternative economic activities, such as ecotourism and renewable energy, should therefore be further investigated.

**3. GIS & remote sensing:** GIS and remote sensing are essential tools for decision support. There is a clear need for better spatial analyses and maps of the area. The IES has acquired and pre-processed Landsat and MODIS images of the southern part of Vietnam for visual interpretation on its online GIS tool 'Vision'. These images can be obtained by the Vietnamese forest department or by other organizations that will use them for non-profit applications to strengthen environmental security.

**4. Satellite monitoring:** To identify ecosystem threats, a reliable and transparent satellite monitoring system has to be put in place, combining remote sensing with field monitoring for verification and validation. The Vietnamese authorities and research organizations have much to gain by establishing partnerships with regional and international research organizations, such as the European Space Agency. Data on land use and vegetation change provided by such a satellite monitoring system could serve as the scientific basis for the allocation of international climate funds (the Green Climate Fund, REDD+), assuring that the international community "gets what it pays for".

### GOVERNANCE AND DIPLOMACY

**5. Participatory governance:** In policy development in the Nam Can District, stakeholders from various sectors should be actively involved from the start.

**6. Land use planning:** Uncontrolled land use changes can have a strong impact on the water balance in Nam Can District. It is strongly recommended to develop a sustainable land use strategy and plan, specifying (multi-)functional land uses, such as shrimp farming, fishery, forest exploitation and forest protection. These land use plans should be based on vulnerability assessments and environmental impact assessments.

**7. Climate change adaptation:** To mitigate the disrupting effects of increasingly frequent extreme climate events, adaptation measures need to be taken, e.g. in the areas of infrastructure protection and water and forest management. It is essential to incorporate such adaptation measures in economic and social development policies, research and planning. The "Master Plan on Socio-Economic Development of Ca Mau Province till 2020" needs to be amended to respond to these new challenges.

**8. Forest protection and reforestation:** Poor communities of Nam Can District relying on the mangroves for fuel and building wood are generally condoned for cutting the forests. As stated in the Master Plan for Ca Mau Province, reforestation of mangroves and other vegetation is needed to provide basic needs for these local communities. Meanwhile, the authorities have the responsibility to prevent further wide scale destruction of the mangroves.

**9. Polluter pays:** Vietnam is strongly encouraged to develop and implement policies based on the polluter-pays principle. A combination of both command-and-control and market-based implementation approaches is recommended for Nam Can District in order to protect mangrove forests from increasing pollution.

**10. Mekong River Commission:** The Mekong River Commission (MRC) provides a very significant arena for diplomacy and negotiation. In order to enhance regional stability, diplomatic efforts need to be pursued to maintain dialogue with the other riparian countries, to increase cooperation and to prevent decisions that could directly or indirectly affect Vietnam's fertile Mekong Delta.

### LAW

**11. Multilateral Environmental Agreements:** As Vietnam is a Party to many Multilateral Environmental Agreements (MEAs), including the Convention on Biological Diversity, the Climate Change Convention and the Ramsar Convention on Wetlands, it has an international legal obligation to protect and sustainably manage sites such as the Mui Ca Mau National Park in the Nam Can District. If and when desired, the Secretariats of the relevant MEAs should be ready to advise the Vietnamese government on effectively translating this international obligation into national and local legislation.

**12. Enforcement:** Rather than fining or jailing poor local community members for cutting forests, more innovative and effective alternatives should be put in place to enforce legislation. To deal with illegal cutting, they can for instance be involved in reforestation efforts in return for basic provisions. Once such alternatives mechanisms are in place the law on mangrove forest protection should be more objectively and strictly enforced.

### FINANCE AND ECONOMICS

**13. Ecotourism:** Making use of the region's ecotourism potential may provide a viable way to increase job opportunities and economic development while conserving unique ecosystems. Public and private actors are encouraged to invest in the improvement of infrastructure, water transportation, additional services, and marketing activities in tourist hubs such as Ca Mau and Ho Chi Minh City.

**14. Ecological shrimp farming:** Even though international demand for high quality and sustainably produced shrimps is considerable, a successful transition to more ecological production would require serious investments in business development, market assessments, training, consortium building and the development of a marketing strategy.

**15. Payment for ecosystem services:** As protection and restoration of mangrove ecosystems are vital adaptation measures against sea level rise, it is strongly recommended to set up contractual "Payment for Ecosystem Services (PES)" arrangements with the authorities responsible for mangrove protection. Restoration measures are likely to qualify for funding out of the Green Climate Fund, as decided during the UNFCCC COP16 in Cancun in December 2010, whereas protection of existing mangrove forests sequestering CO2 from the atmosphere, may benefit from the REDD+ financial provisions that are currently being developed.

### EDUCATION AND EMPOWERMENT

**16. Capacity Building:** Empowering the relevant decision-makers to make the transition to a more sustainable economic development requires a great deal of training, such as on strategic planning, environmental impact assessments (EIAs), law enforcement, environmental monitoring, water quality, climate change, forest loss, the use of agro-chemicals and waste disposal.

**17. Public Awareness:** In addition to capacity building, it is also exceptionally important to run public environmental awareness programs on the importance of mangrove protection, the effects of chemical pollution, the proper disposal of waste and alternatives to shrimp farming.

# MEKONG DELTA

SUMMARY

## Environmental degradation

The Greater Mekong River Basin is one of the world's most biologically diverse river basins, ranking second behind the Amazon. It possesses endangered, rare and endemic species of flora and fauna. The Mekong River innervates the region providing fresh water, nutrients, habitat and sources of livelihoods. It also provides services such as prevention and flushing out of high salinity levels from low lying areas, as well as opportunities for hydropower generation. The Greater Mekong region, extending into China, Myanmar, Lao PDR, Thailand, Cambodia and Vietnam, is also renowned for its food exports such as rice and seafood. Many hydro-electricity dams are constructed in the Mekong River and its tributaries, and many more are planned. While progress in economic development and energy distribution has benefited some of the poor, it has also jeopardized environmental health and thus in the long run environmental security. Combined with the impacts of climate change, the lives of more than 60 million people inhabiting the lower reaches of this river basin, and millions more who rely on the ecosystem services and goods, are greatly affected.

## Nam Can District, Vietnam

The Nam Can District in Ca Mau Province, Vietnam represents some of the major problems of the Mekong Delta. The mangrove forests of this area provide vital ecosystem services. Not only do mangroves sustain rich biological diversity, by providing fish habitats and breeding grounds, they also provide coastal protection against devastating tsunamis and further sea level rise.

Despite its conservation value and long term sustainable development potential, the Nam Can District is faced with extensive environmental destruction. The economic strategy to lift the region out of poverty and increase the competitiveness of its export driven economy has resulted in a drastic conversion of agricultural lands and mangrove forests into fish farms and shrimp farms. Mangrove forests are also cut to supply construction wood and fuel wood. As a result, salt water intrusion leads to serious ecosystem changes.

The District government's current economic plan is to shift to intensive shrimp aquaculture. This method of shrimp farming is known for its environmental destructive nature, introducing greater quantities of hazardous chemical pollution into waterways. Chemicals in turn destroy mangroves, fish habitats and breeding grounds. Local communities lack alternative sources of livelihood and are largely unaware of the negative environmental and health impacts of such shrimp farming systems.

## Mekong Delta

## Planning for sustainability

Given the lack of multi-sectoral and integrated planning, the government investments in intensive aquaculture will inevitably lead to more salt water intrusion and continued loss of livelihoods. The challenge now is to find ways to balance economic development with environmental protection in the context of rich ecosystems and a government moving away from a centrally based economy to economic liberalization and international integration. However, the greatest variable for ensuring long-term stability in the region is whether people and governments are sufficiently willing to adapt.

