1. **Key development issues and rationale for Bank involvement**

   The South China Sea is a locally, regionally and globally significant body of water that is surrounded by countries that are experiencing rapid population and economic growth. This bio-geographic region is one of the world’s most biologically diverse shallow-water marine areas. However, this biological richness is seriously threatened by environmental problems, in particular land-based anthropogenic pollution.

   A major source of land-based pollution is intensive livestock production. The region is the World’s most important livestock production area. It is particularly dominant in the pig sector, the largest livestock-based source of water (and other) pollution. China, Vietnam, and Thailand accounted for about half of all pigs in the world in 2001. This share is rising. Roughly 80 percent of the total production increase stems from intensive forms of livestock production, the vast majority of which is located around the major urban centers close to the coastal regions of the (East and) South China Sea. Considering that a large proportion of the nutrients contained in feed are not retained in the animal’s body but excreted in urine and manure, the result is an excessive concentration of nitrogen (N) and phosphorus (P) compounds in the periphery of the urban areas, which results in significant water, land, and air pollution. A World Bank analysis for the coastal regions of Central South, South-west, and East China showed that the Chemical Oxygen Demand (COD) from untreated piggery waste alone accounted for about 28 percent of the current urban plus-industrial COD loads already in 1996. However, this share is estimated to rise to 90 percent in 2010.

   The CAS’s of China, Thailand, and Vietnam all reflect the need for rapid economic growth that is environmentally sustainable. All three countries have recognized the detrimental environmental impact of rapidly increasing intensive production of livestock and have begun to develop appropriate regulations and other measures. However, these measures are not sufficient and, where they exist, they are far from effective due to serious implementation problems. While capacity differs considerably, all three countries have yet to realize effective institutional and
technical capacity for environmentally sustainable livestock production. The proposed project would significantly improve the countries’ capacity to address livestock-based pollution and provide the countries with international good practice and regional experience. FAO/LEAD, CIDA, and ADB have all provided technical assistance or other support for methods of livestock-based pollution abatement in the region. GEF is supporting several similar projects that address livestock-related pollution in Eastern Europe. The results and lessons learned of these projects will directly feed into or complement the proposed project.

2. Proposed objective(s)

The project’s development objective is to demonstrate replicable and sustainable livestock waste management approaches that will protect and improve the local and global environment while enhancing livelihoods, particularly in public health. The environmental benefits of the project would be most immediate for the local environment in the demonstration watersheds of the Livestock Waste Environmental Impact Mitigation Component. In addition, through replication of these demonstration sites as well as through the Institutional Development Component and Project Monitoring the project would lead to positive environmental impacts both at the local levels and for the South China Sea. While the main environmental benefit of the project would come from reduced pollution of surface water draining into the South China Sea, other local and global benefits would occur in the areas of biodiversity, land degradation, and climate change.

3. Preliminary description

The proposed project would be implemented through separate arrangements in each of the three Participating Countries, thus ensuring strong country ownership under very different institutional settings and livestock-based pollution problems. In order to make full use of international and regional knowledge and experience, to exploit cross-country learning experiences and other synergies such as cost-savings for the development of policy tools a fourth, regional coordination and support part would be established. The proposed project consists of the following three components:

The outcome of the Institutional Development Component would be a conducive policy framework for livestock waste management with strengthened and better-enforced regulations, more effective institutions and financial incentives. The project would finance activities for the development of policies and decision-support tools (draft regulations, planning, guidelines, standards, use surveys and GIS techniques, etc.) as well as capacity-building, awareness-raising, and enforcement of policies and regulations through training of central and local officials and farmers, institutional cooperation, and a communication program.

The Livestock Waste Environmental Impact Mitigation Component would result in demonstration watersheds with improved livestock waste management with improved nutrient-balances. In each country it would be implemented in one or two watersheds that drain into the South China Sea. Sub-components would include area-wide planning with GIS techniques, surveys and registration procedures, and the actual physical demonstration sites of improved waste management both, for large number of small producers (‘non-point source pollution’) and for selected large farms (‘point source pollutions’).

The outcome of the Project Management and Monitoring Component would be efficient project management and information on livestock-induced environmental changes and their underlying causes. This component includes a Project Management Sub-component with work done in the project management units and the training and equipment needed for efficient project management. A second sub-component includes the monitoring of the project, including implementation progress monitoring, monitoring of water pollution and other environmental indicators, nutrient-balances and other project aspects, e.g. rate of compliance with environmental regulations, and the monitoring and evaluation of the specific demonstration sites.

The outcome of the Regional Support and Coordination Component would be efficient sharing of knowledge and experiences amongst all countries. The component would include regional workshops, develop of mechanisms for informal collaboration amongst countries, and the development of policy and decision tools. Each participating country is at a different stage of livestock development, thus sharing of experiences can lead to significant mitigation of livestock waste during the development process. Capacity building at the regional level to address this
problem and similar problems would be improved by this component. This component might be implemented by FAO/LEAD, which has a comparative advantage in its technical expertise and previous work in this area in the region.

**Implementation Arrangements.** This project is a joint World Bank and FAO/LEAD (Livestock, Environment and Development) initiative. FAO/LEAD has already done provided substantial technical assistance to all three countries. It will play a key role in assisting the Participating Countries in the project preparation process and execute the PDF-B preparation grant. It is also foreseen that FAO will be the responsible agency for the coordinating and support part of the project. The in-country implementation will require strong inter-agency cooperation, in particular between the relevant agencies for agriculture and environment. The proposed project seeks to build extensive partnerships both, (i) at the country level such as with (i a) the proposed IBRD-financed Guangdong Pearl River Delta Urban Environment Project in Guangdong Province of China, (i b) the proposed IDA-financed Rural Water and Sanitation Project in Vietnam, and (i c) with the private sector, and (ii) at the regional level with (ii a) the UNEP/GEF Coordinating Unit of the ‘Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand’ Project, (ii b) the IMO/UNDP ‘Building Partnerships for the Environmental Protection and Management of the East Asian Seas Project’, (ii c) the Global Programme of Action (GPA) for the Protection of the Marine Environment from Land-Based Activities, and (ii d) the Mekong River Basin Authority.

4. **Safeguard policies that might apply**

The safeguard on *Environmental Assessment (OP/BP 4.01)* applies. An EA will be undertaken to analyze the environmental risks and benefits of the project and develop procedures for site-specific environmental screening and analysis. In addition, the safeguard on *Involuntary Resettlement (OP/BP 4.12)* will be triggered. For instance, no appropriate land that is owned by the community might be available for communal-level waste storage or treatment facilities supported by the project. Therefore, country-specific resettlement action policy frameworks and, for those specific investments that are already identified at appraisal, site-specific resettlement plans will be developed as part of the social assessment work. The applicability of other safeguard policies such as *Indigenous Peoples (OP 4.20)* and, possibly, *Natural Habitats (OP 4.04)* need to be assessed during the preparation process. It is proposed that an Environmental Specialist will be contracted under the PDF-B funds to work with the local team and ensure and that it covers the regional aspect adequately in the EIA, and that other safeguards are adequately assessed and addressed. A Bank Safeguard specialist will support and guide the work of the consultant.

5. **Tentative financing**

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<th>Source</th>
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<td>GLOBAL ENVIRONMENT FACILITY</td>
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<tr>
<td>FOREIGN MULTILATERAL INSTITUTIONS (UNIDENTIFIED)</td>
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<tr>
<td><strong>Total</strong></td>
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6. **Contact point**

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