２－３　環境予備調査結果

２－３－１　環境法規と環境許可

（１）環境法規

１）国家環境関連計画及び戦略等

ａ）“National Plan for Environment and Sustainable Development（NPESD）1991-2000”（環境及び持続可能な開発に関する国家計画1991～2000年）

1980年代ベトナムでは開発に対する環境問題への関心が高まり、同国で環境法規・組織づくりの本格的な検討がなされた。こうしたなか、UNDP等の支援により1991年に環境マスタープランというべき本計画が策定された。この国家計画の中で環境行政法規制・組織等の整備が提言され、これらが次項以降に整理した現在の環境法組織体系の基礎となっている。

ｂ）“National Biodiversity Action Plan（BAP）1995”

（生物多様性国家行動計画 1995年）

生物多様性に関する本計画は、1995年12月に首相決議第845/TTg（Prime Minister Decision No.845/TTg）により承認された。本計画の主な活動内容を整理すると以下となる。

・政策と法的問題
・保護区域の設定と管理
・住民意思向上
・キャパシティー・ビルディングとスタッフ訓練
・科学的調査
・社会経済的問題
・国際協力

ｃ）“National Strategy for Environmental Protection（NESP）2001-2010”

（国家環境保護戦略 2001～2010年）

NPESDの採択後、環境管理や保護に関し一定の成果を出したものの環境は引き続き悪化し続けている。このため、「近代化と工業化期における環境保護の強化“Enhancing Environmental Protection in the Period of Modernization and Industrialization”」に関する政治局令第36/CT-TW（Political Bureau’s Directive 36/CT-TW）に従い、NPESDの後継計画として本戦略が当時の科学技術環境省[7] “Ministry of Science, Technology and Environment : MOSTE”により作成され、政府に提出された。

本戦略で提示している環境政策の目的は以下のとおりである。

・公害の防止と管理
・自然及び生物資源の保護、保全及び持続的利用
・都市部、工業地帯及び地方地域の環境の改善

[7] MOSTE の環境部門は、2002年の行政改革により分離され、天然資源環境省“MONRE: Ministry of Natural Resources and Environment”として組織された。詳細は項目（２）参照。

以上の政策的目的の達成ために、13の明確な目的（Specific objectives）及び８つの横断的テーマ（Crosscutting themes）に基づいた77のプログラム（Programs）を実施するとしている。このため、1999年当時の環境局（NEA）／MOSTEが、全国61省（Provinces）、35の政府組織及び非政府団体（NGOs）に対し質問表ベースで調査を実施した。この調査結果を踏まえ、この77プログラムの中から以下の分野における７つが最優先プログラム（Highest Priority Programs）として認識された。

①持続的工業開発（Sustainable industrial development）
②固形及び有害廃棄物管理（Solid and hazardous waste management）
③水資源の保護及び持続的利用（Protection and sustainable use of water resources）
④持続的森林利用（Sustainable use of forests）
⑤環境管理能力の強化（Strengthened environmental management capacity）
⑥環境教育（Environmental education）
⑦環境保護の地域参加（Community movements of environmental protection）

次に、NSEPの21プログラム（programs）が優先プログラム（High Priority Programs）としてショートリスト化され、残りの49プログラムはロングリスト化されている。表２－47にNSEPの全プログラムを示す。

ｄ）“Comprehensive Poverty Reduction and Growth Strategy（2002）”
（包括的貧困削減及び成長戦略2002年）

2002年に本戦略が策定され、その中で「開発」とは持続的でかつ天然資源を枯渇させないよう環境と天然資源諸問題を、省・郡レベルにおける「社会経済開発マスタープランへ統合する」ことを求めているとしている。

ｅ）“NSEP & Vision: National Strategy for Environmental Protection until 2010 and Vision to 2020（2003）”（国家環境保護戦略及び2020年へ向けてのビジョン2003年）

2003年に首相により承認（Government Decision 256/2003/QD-TTg, May 2003）されたこの2010年NSEP及び2020年へのビジョンは、ｃ）に示したNSEP（2001-2010）を発展的に改定したものと考えられ、戦略的環境アセスメント（Strategic Environmental Assessment：SEA）の導入を求めるなど新たな環境保全に関する方向性を検討している（SEAは2007年からMONREにより施行済み）。また、この戦略では、2003～2007年及び2007年から2010年の二期による事業実施と、2020年に向けての方向性を明確にしたもので、36の環境保全に関する優先事業がリストアップ（表２－48）されている。

ｆ）“Strategic Orientation for Sustainable Development in Vietnam（Vietnam Agenda 21 Strategy）（2004）”（持続的開発の戦略的方向性（ベトナム・アジェンダ21戦略）2004年）

2004年に策定された本戦略は、MDGs and Vietnam Socio-economic Development Plan for 2006-2010をはじめ広範な開発戦略が明記されており、その中で「客観的な社会経済開発」という概念が導入され、環境保全は社会経済開発と同時に実施することになるとした、持続可能な開発の概念等を明記している。（http://www.va21.org/eng/参照）

表２－47　NESP2001-2010の全プログラムリスト及び優先順位（１／２）

No.	Programs	Ranking		
		1	2	3
Specific objective: Protection and improvement of industrial environments through cleaner production and other strategies				
1	*Prepare a comprehensive master plan for sustainable industrial development which covers all stages of resource use, production and waste management*	×		
2	*Control and manage air, water and noise pollution in industrial units.*		×	
3	*Implement a strategy for cleaner production*			×
4	*Close down industrial units which fail to comply with pollution control standards and regulations*			×
5	*Ensure adequate standards of occupational health and safety are met*			×
	Specific objective: Protection and improvement of urban environments			
6	*Formulate and implement laws, standards and regulations on solid and hazardous waste control.*		×	
7	*Prepare a strategy and management plan for solid and hazardous waste disposal areas and effective treatment systems for densely populated urban areas*	×		
8	*Enforce the standards on space and ecological landscape planning.*			×
9	*Improve and renovate water supply and sewerage systems in cities*		×	
Specific objective: Protection and improvement of rural environments				
10	*Formulate and issue standards on environmental hygiene and food safety.*			×
11	*Effectively control and manage the use of fertilizers and pesticides.*		×	
12	*Ensure supply of clean drinking water*			×
13	*Prevent pollution from small and medium enterprises and agricultural and animal husbandry activities*			×
Specific objective: Sustainable use of resources and improvement of environmental quality in all seven economic regions guided by regional environmental action plans				
14	*Prepare and implement regional environmental action plans for each regions*		×	
15	*Integrate the regional environmental plans into the socio-economic plans for the regions*			×
16	*Explore the establishment of regional organizations to facilitate integrated planning and management of environmental protection and sustainable resource use*			×
Specific objective: Sustainable use of resources and improvement of environmental quality in all development sectors				
17	*Ensure that every sector adopts the principles of conservation and sustainable use of resources in all aspects of its operations*			×
18	*Ensure that every sector prepares an environment action plan as part of its sector development plan*		×	
19	*Improve efficiency in energy production and use*			×
20	*Increase the use of clean energy technologies and practices including renewable energy systems*			×
21	*Ensure that transport systems are planned consistent with the action plans for Vietnam's terrestrial and marine biodiversity regions*			×
22	*Develop environment policy and regulations relating to trade*			×
Specific objective: Protection and sustainable use of water resources				
23	*Promulgate further standards and regulations on protection and sustainable use of water resources. Emphasize on river basins, reservoirs, dams and underground water.*	×		
24	*Rehabilitate rivers and drainage systems, especially the rivers flowing through heavily populated areas, industrial and urban areas.*			×
25	*Evaluate the groundwater quality and quantity, and promulgate specific regulations for sustainable use of groundwater.*			×
Specific objective: Conservation and sustainable use of land resources				
26	*Assess and inventory land resources for sustainable land use and complete the classification of land uses*		×	
27	*Protect land against degradation and sterilization including the conservation and wise management of soil resources*			×
28	*Plan for the sustainable management and use of land in ecologically sensitive areas*			×
	Specific objective: Protection of the atmosphere			
29	*Replace leaded gasoline with unleaded gasoline.*			×
30	*Implement the strict standards on gas emission and dust pollution from industrial, energy, agricultural production, transportation and other sectors.*		×	
Specific objective: Conservation and sustainable use of biodiversity resources				
31	*Regularly revise the Biodiversity Action Plan in keeping with the government's development planning cycle*		×	
32	*Initiate a program of ecotourism pilot activities based on the principles of natural landscape protection, environmental awareness and sustainable use.*			×
33	*Ensure the conservation of biodiversity in agricultural systems*			×
34	*Enhance management of national parks and other protected areas, expand the protected areas system and devolve management responsibilities to local authorities and communities.*			×
Specific objective: Conservation and sustainable use of forests				
35	*Enhance the management and sustainable use of forests through community involvement and the definition of tenure arrangements*	×		
36	*Finalize management regulations and enhance law enforcement to ensure forest protection in river basins and special use forests*		×	
37	*Restore depleted upstream forests*			×
38	*Establish and effectively manage parks and reserves in forest ecosystems, particularly in areas of primary forest*			×
39	*Demonstrate ecological approaches to village development which emphasize agro-forestry*			×

注：１：Highest priority, and fully covered in NEAP 2001-2005
２：High priority, and partially covered in NEAP 2001-2005
３：Priority, and not covered in NEAP 2001-2005

出典："VIETNAM, Orienting Plan for Priority Programmes of Environmental Protection 2001 - 2005 （ENVIRONMENTAL ACTION PLAN 2001 - 2005），（Specific actions for the period 2001-2005 of National Strategy of Environmental Protection 2001-2010）", Hanoi, 2001, NEA, HP: http://www.nea.gov.vn/english/state/VN_Orienting-Plan2001-2005.htm#_Toc521732247

表２－47　NESP2001-2010の全プログラムリスト及び優先順位（２／２）

No.	Programs	Ranking		
		1	2	3
Specific objective: Protection and sustainable use of seas, coasts and islands				
40	*Prepare and promulgate a strategy and action plan for integrated protection and use of marine and coastal resources.*		×	
41	*Introduce legislation for the sustainable use of marine resources*			×
42	*Review and finalize the legislation on preventing marine pollution from natural resources exploitation, transportation, and tourist activities.*			×
43	*Establish a system for effective response to accidents causing sea pollution, with particular reference to oil spills.*			×
44	*Restore and protect coastal areas degraded through over use, with special emphasis on mangrove systems*			×
Specific objective: Conservation and sustainable use of wetlands				
45	*Prepare and implement a national wetlands action plan and program*			×
46	*Ensure the effective management and sustainable use of wetlands through appropriate institutional arrangements and community involvement*		×	
Specific objective: Protection and sustainable use of natural and cultural heritage				
47	*Strengthen the legal and institutional framework for the protection and management of cultural and natural heritage*			×
48	*Restore and protect cultural and natural heritage areas degraded and under threat*		×	
49	*Increase awareness of heritage values and decentralize control and management responsibilities to local authorities*			×
50	*Increase community and non-government organization participation in protection and management of heritage areas*			×
Cross cutting objective: Strengthen the Government's environmental management capacity				
51	*Upgrade and strengthen the environmental management institutional arrangements and capacity from central to local levels and in different ministries/sectors.*	×		
52	*Establish district and commune level environment management agencies, in the ministries, sectors, key economic regions and centralized industrial zones*		×	
53	*Establish a State Committee for Sustainable Development to co-ordinate the involvement of all sectors and provinces on environmental protection and sustainable development.*			×
54	*Establish national environmental information system*			×
Cross cutting objective: Increase the role of business in environment protection and improvement and sustainable resource use				
55	*Explore the feasibility of establishing a business forum for sustainable development*			×
56	*Encourage exchange of information and expertise between enterprises in addressing environmental problems*			×
57	*Encourage enterprises to establish environmental monitoring systems*		×	
58	*Support enterprises in applying ISO 14000 environment management systems*			×
Cross cutting objective: Promote training and education for improving environmental awareness				
59	*Introduce environmental education at all levels in the school and tertiary education systems*	×		
60	*Undertake activities to raise the level of environmental awareness and education throughout the community.*		×	
61	*Increase the number of teachers trained in environmental education and develop tools and methods for teaching environmental curricula*			×
62	*Ensure that professionals and managers in state agencies have the skills, incentives and awareness to integrate environmental factors into their work*			×
Cross cutting objective: Increase the participation of community groups and individuals in environment protection and improvement, and sustainable use of resources				
63	*Launch movements for environmental management and action among mass organizations such as Youth Union, Union of Women, Association of Veterans, Farmers Union and other voluntary organizations.*	×		
64	*Promote and facilitate the contribution of non government organizations and community groups in protection and management of the environment*			×
65	*Improve public access to information on environmental issues*		×	
Cross cutting objective: Increase and diversify investment in environment protection and improvement, and the sustainable use of resources				
66	*Increase investment from the State budget to environment management activities, striving to go beyond 1% of total budget by 2005.*			×
67	*Establish national, sector and local environment funds*			×
68	*Issue policies and establish mechanisms for mobilizing resources for the environment from the public and private sectors, and from the wider community*		×	
Cross cutting objective: Expand international co-operation and assistance				
69	*Facilitate the formation of specific international partnerships for co-ordinated support to the implementation of key environmental policies and programs*			×
70	*Ensure that obligations under international environmental agreements are effectively implemented through domestic policies and programs and institutional responsibilities are clarified*			×
71	*Devise and implement a strategy for increasing the benefits from the Global Environment Facility*		×	
Cross cutting objective: Promote research on environmental science and technology				
72	*Develop and enhance research capacity in environmental science and technology to effectively solve environmental problems*		×	
73	*Build a national system of environmental science, technology and research centers*			×
74	*Prepare and implement a　environmental research strategy*			×
75	*Promote development of the domestic industry for advanced and appropriate environmental technologies*			×
Cross cutting objective: Reduce the rate of population growth and manage internal migration to minimize adverse environmental impacts				
76	*Implement family planning policy in order to meet the sustainable population size*			×
77	*Introduce policies and programs to reduce the negative impacts of internal migration on natural resources and environmental quality*		×	

注：１：Highest priority, and fully covered in NEAP 2001−2005
２：High priority, and partially covered in NEAP 2001−2005
３：Priority, and not covered in NEAP 2001−2005

出典："VIETNAM, Orienting Plan for Priority Programmes of Environmental Protection 2001 - 2005 （ENVIRONMENTAL ACTION PLAN 2001 - 2005）,（Specific actions for the period 2001-2005 of National Strategy of Environmental Protection 2001-2010）", Hanoi, 2001, NEA
HP: http://www.nea.gov.vn/english/state/VN_Orienting-Plan2001-2005.htm#_Toc521732247

表２－48　「2010年NESP及び2020年へ向けてのビジョン（2003年）」の優先事業

Program Code	Program Title	Priority Ranking	Completion Date	Implementing & Coordinating Agencies
I. PROGRAMS TO BE IMPLEMENTED				
1. Pollution Control & Prevention				
MT.PK1	Resolving of industries that seriously pollute the environment	Highest	2012	MoNRE, Line Ministries & PPCs
MT.PK2	National hazardous waste treatment	Highest	2010 for 1st phase	MoNRE, Line Ministries & PPCs
MT.PK3	Medical waste treatment	Highest	2010 for 1st phase	MoH, Line Ministries & PPCs
MT.PK4	Solid waste management capacity and efficiency improvement in urban & industrial areas	Higher	2010 for 1st phase	MoC, MoT, Line Ministries & PPCs
MT.PK5	Cleaner production & Environmentally friendly technology adoption in Vietnam	High	2010	MoNRE, MoI, Line Ministries & PPCs
MT.PK6	Incentives for enterprises in environmental protection and international economic integration	High	2010 for 1st phase	MoTr, MoNRE, Line Ministries & PPCs
MT.PK7	Development & implementation of environmentally friendly technology innovation road-map	High	2010	MoST, Line Ministries and PPCs
2. Remedy of Seriously Polluted and Degraded Environments				
MT.KP1	Rehabilitation of seriously polluted & degraded urban canals, ponds, lakes & river sections.	High	2010 for 1st phase	MoC, MoT, Line Ministries and PPCs
MT.KP2	Remedy of environmental consequences caused by the American chemical warfare	Highest	2010	MoNRE, Line Ministries and PPCs
3. Natural Resource Protection & Sustainable Exploitation				
MT.BK1	Restoration of seriously degraded watershed forests	High	2010	MARD, Line Ministries & PPCs
MT.BK2	Cau River Basin Environmental Protection	Highest	2010 for 1st phase	MoNRE, MARD, Line Ministries & PPCs
MT.BK3	Nhue-Day River Basin Environmental Protection	Highest	2010 for 1st phase	MoNRE, MARD, Line Ministries & PPCs
MT.BK4	Saigon-Dong Nai River Basin Environmental Protection	Highest	2010 for 1st phase	MoNRE, MARD, Line Ministries & PPCs
MT.BK5	Urban air quality improvement	High	2010	MoT, Line Ministries & PPCs
MT.BK6	Rehabilitation of seriously degraded typical eco-systems	Higher	2008	MARD, Line Ministries & PPCs
MT.BK7	Environmental restoration of closed mineral mines	High	2010	MoI, MoNRE, Line Ministries & PPCs
4. Environmental Protection of Focal Areas				
MT.KV1	Implementation of National Oil Spill Preparedness and Response Plan	Higher	2010	NCS, Line Ministries & PPCs
MT.KV2	National Targets for Rural Clean Drinking Water Supply & Environmental Sanitation	Higher	2010 for 1st phase	MARD, Line Ministries & PPCs
MT.KV3	Upgrading of urban drainage systems & construction of centered wastewater treatment systems	Higher	2010 for 1st phase	MoC, MoT, Line Ministries & PPCs
MT.KV4	Construction of centered wastewater treatment systems meeting environmental standards in all industrial parks	Higher	2010 for 1st phase	MoI, IPMB, Line Ministries & PPCs
MT.KV5	Protection of wetlands of national importance in Vietnam	Higher	2010	MoNRE, Line Ministries & PPCs
MT.KV6	Natural and cultural heritage conservation & development	High	2010	MoCI, Line Ministries & PPCs
5. Nature & Biodiversity Conservation				
MT.TN1	Improvement of protected area management, protection and development	Higher	2010	MARD, MoF, Line Ministries & PPCs
MT.TN2	Implementation of five million hectare reforestation	Highest	2010	MARD, Line Ministries & PPCs
MT.TN3	Ecological economic village model development & replication	High	2010	MARD, Line Ministries & PPCs
MT.TN4	Protection of highly endangered species of fauna	High	2010	MARD, Line Ministries & PPCs
II. PROGRAMS TO IMPLEMENT SOLUTIONS OF THE STRATEGY				
MT.GP1	Strengthening of the governance of environmental protection at central, local and sectoral levels	Highest	2010	MoNRE, Line Ministries & PPCs
MT.GP2	Improvement and enforcement of the environmental legal system	Highest	2010	MoNRE, MoJ, Line Ministries & PPCs
MT.GP3	Research & development and adoption of economic instruments to environmental protection	Higher	2010	MoNRE, MF, MPI,
MT.GP4	Integration of environmental protection contents into the national educational system	High	2010	MoET, MoNRE, National Universities
MT.GP5	Enhancement of mass media's role in public environmental awareness raising	Higher	2010	MoCI, Line Ministries & PPCs
MT.GP6	Socialization of Environmental Protection	High	2010	MoNRE, Line Ministries & PPCs
MT.GP7	Integration of environmental considerations into socio-economic planning	High	2010	MPI, Line Ministries & PPCs
MT.GP8	Strengthening of scientific research & technological development capacities in environmental protection	High	2010	MoST & Line Ministries
MT.GP9	Enhancement of environmental monitoring and analytical capacities	High	2010	MoNRE, Line Ministries & PPCs
MT.GP10	Involvement of the entire people in environmental protection	High	2010	VNFF and People's Organizations

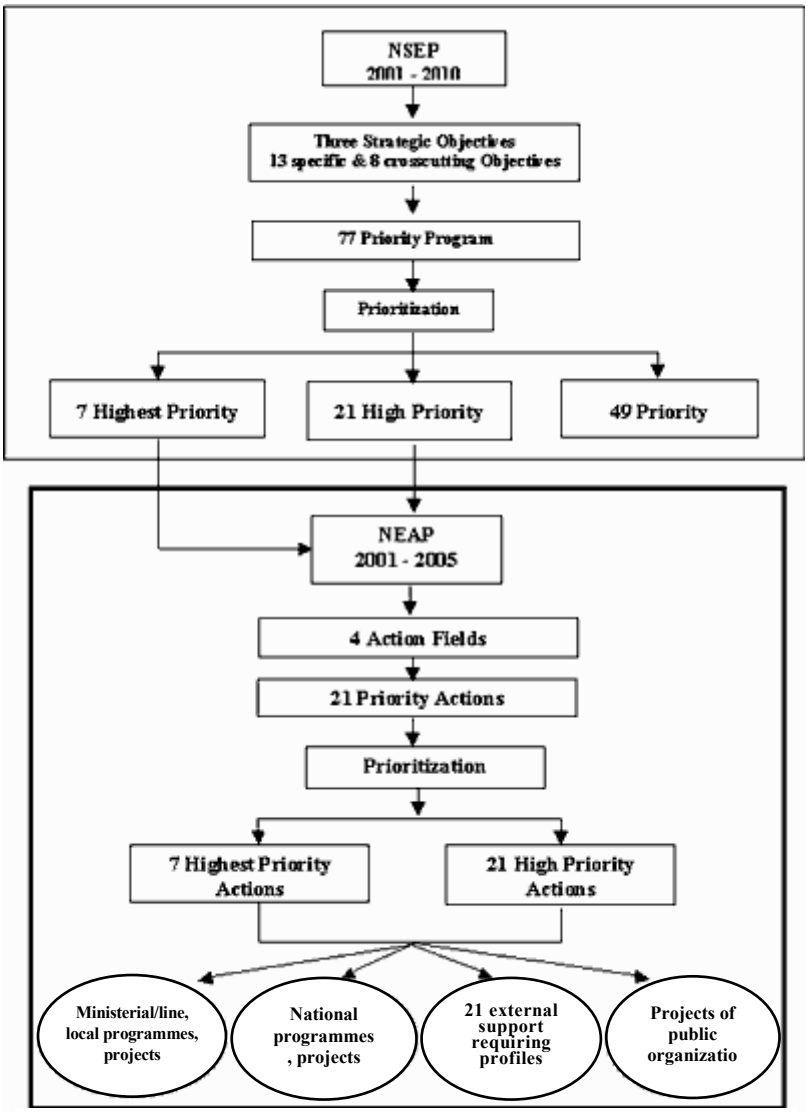
Note : **IPMB** = Industrial Park Management Board; **MARD**= Ministry of Agriculture & Rural Development; **MOC**= Ministry of Construction; **MOCI**=Ministry of Culture & Information; **MoET**= Ministry of Education & Training; **MF**= Ministry of Finance; **MoF**= Ministry of Fisheries; **MoJ**=Ministry of Justice; **MoH**= Ministry of Health; **MoI**= Ministry of Industry; **MoND**= Ministry of National Defense; **MoNRE**= Ministry of Natural Resources & Environment; **MPI**= Ministry of Planning & Investment; **MoST**= Ministry of Science & Technology; **MoT**= Ministry of Transport **MoTr** = Ministry of Trade; **NSC**= National Secure Committee; **PPCs**= Provincial People's Committees; **VNFF** = Vietnam Fatherland Fron

出典：National Strategy for Environmental Protection until 2010 and vision toward 2020, MONRE, May 2003

g）“National Environment Action Plan（NEAP）2001−2005”

（国家環境行動計画 2001～2005年）

本計画は、NSEP（2001～2010年）で提言された多様な計画案に焦点を当て、2001年から2010年の最初の５カ年で実施すべきベトナムの環境の維持及び改善の必要な行動計画に優先順位を充てるものである。この５カ年行動計画は、セクターマスタープランと実施計画の一種の混在計画と位置づけられる。なお、本計画の最終的な目的は、「NSEPの最優先プログラム（The highest priority programs）を実施させることである。図２－18に本計画の実施フローの概要を示す。



出典：“VIETNAM, Orienting Plan for Priority Programmes of Environmental Protection 2001 - 2005 (ENVIRONMENTAL ACTION PLAN 2001 - 2005), (Specific actions for the period 2001-2005 of National Strategy of Environmental Protection 2001-2010)”, Hanoi, 2001, NEA
HP:http://www.nea.gov.vn/english/state/VN_Orienting-Plan2001-2005.htm#-Toc521732247

図２－18　国家環境活動計画（NEAP）の実施フロー案

NEAPで示された具体的なアクション（specific actions）は、以下の４点を中心課題とし、上記の７つの最優先プログラム（Highest priority programs）及び14優先プログラム（Priority programs）を実施することである。

①公害の防止と管理

②生物多様性の保護及び持続的な自然資源利用の促進のための優先行動の実施

③関連機関の環境管理能力の改善

④環境管理における住民参加の促進

表２－49にNEAPの計21の優先プログラム（７最優先プログラム及び14優先プログラム）を示す。

表２－49　「NEAP2001～2005年（NEAP）」の優先プログラムリスト

No	Program	Classification	
		Highest Priority	High Priority
Pollution Prevention and Control			
1	Minimize adverse environmental impacts by industrial sectors	×	
2	Increase solid waste management capacity, especially hazardous waste management in densely populated areas and industrial zones.	×	
3	Control and effectively manage fertilizers and pesticides		×
4	Rehabilitate and upgrade sewage and drainage in major urban areas		×
5	Implement air emission standards and dust control		×
Biodiversity Protection and Natural Resource Sustainable Use Promotion			
6	Protect and sustainable use water resource	×	
7	Increase forest management and sustainable use with public participation	×	
8	Assess, classify and plan to use land resource		×
9	Review the implementation of Biodiversity Action Plan		×
10	River basin planning; enhance protection and development of special use forest		×
11	Strengthen marine and coastal management		×
12	Improve wetland management and sustainable use		×
13	Protect natural and cultural heritage		×
Strengthening Environmental management capacity			
14	Upgrade and strengthen the institutional arrangements and human capacity for environmental management	×	
15	Prepare and implement Regional Environmental Action Plans		×
16	Mobilize financial resources from public, private sector and international organizations		×
Actions to encourage public participation			
17	Integrate environmental protection into the curriculum and programs at all levels in the formal education system	×	
18	Promote environmental action by voluntary organizations	×	
19	Raise the level of environmental awareness		×
20	Improve public access to information on environmental issues		×
21	Reduce population growth and manage internal migration		×

出典：“VIETNAM, Orienting Plan for Priority Programmes of Environmental Protection 2001 - 2005 （ENVIRONMENTAL ACTION PLAN 2001 - 2005），（Specific actions for the period 2001-2005 of National Strategy of Environmental Protection 2001-2010）”, Hanoi, 2001, NEA
HP: http://www.nea.gov.vn/english/state/VN_Orienting-Plan2001-2005.htm#_Toc521732247

ｈ）“National Environment Action Plan（NEAP）2006-2010”
（国家環境行動計画 2006～2010年）について

NEAP（2006～2010年）は現在作成中であり、その内容の詳細については不明であるが、NEA（国家環境庁：現環境保護庁）の“VIETNAM, Orienting Plan for Priority Programmes of Environmental Protection 2001-2005 （ENVIRONMENTAL ACTION PLAN 2001-2005）（Specific actions for the period 2001-2005 of National Strategy of Environmental Protection 2001-2010)”には以下のように記述があり、参考となる。

・上記の21優先事業実施の成功は、NSEPの成就を確実にする事業であり、NEAP（2006-2010）の実施を容易にするものである。
・環境管理に重要となる戦略、計画や規則が整備、承認そして実施され以下の分野が含まれる。
・石油流出防止及び対応戦略、有害廃棄物管理戦略、殺虫剤及び肥料の効果的管理及び規制戦略。
・環境保護における民間部門参入による経済的インセンティブ、経済開発事業への環境配慮の統合、総合的な水資源探査と利用、産業部門への環境マスタープラン河川流域の環境質に関するマスタープラン及び他の環境基準の発行。

ｉ）2006～2010年におけるベトナムの環境に関する計画について

我が国の国土交通省は「平成18年度ベトナムにおける援助方針策定調査」を（社）国際建設技術協会に委託して実施した。この調査結果から2006～2010年における環境に関する計画等が以下のとおり明らかになった。（以下、出典：「ベトナムにおける援助方針策定調査」、国建協情報、2007/６、一部抜粋）

・「2006年～2010年社会／経済開発５カ年計画」

第８次となる本５カ年計画は、「環境」が新たな柱として入った点に特徴がある。

・「道路セクターの開発計画」

「運輸交通部門開発10年方針」は、MOTにより発表された方針で、道路、鉄道、水運（海港、河川運輸）や空港を取り上げている。ベトナムでは、近年、交通分野で数多くの実績を残してきた一方で、低地や遠隔地の交通、交通安全、交通容量、環境、交通財政といった面でいまだに多くの課題も抱えていると指摘している。

・「2006～2010年天然資源環境開発５カ年計画」

2002年11月に天然資源環境省（Ministry of Environment and Natural Resources：MONRE）が設立（国会承認は同年８月）されたこと、現在策定中である「2006～2010年社会／経済開発５カ年計画」において、「環境」が新たな柱として入ったことから、「2006～2010年天然資源環境開発５カ年計画」の準備が進められている。本計画では「2006～2010年社会／経済開発５カ年計画」で掲げられた経済面、社会面、環境面の３つの将来目標を達成するため、

①天然資源・環境に関する法律、政策、戦略の整備

②天然資源・環境の効果的な管理と持続可能な利用に向けた基礎調査の強化

③生物多様性の保全、汚染防止、環境の質的改善

以上を行う計画としている。

２）環境関連法規

（１）に記したとおり、NPESDの提言等を参考に環境行政法規の策定が開始され、1993年12月に（旧）「環境保護法（Law on Environmental Protection：LEP）が国会で採択、1994年１月に施行された。すなわち、ベトナム憲法で規定する環境保護に係る基本法がこのLEPであり、後の2005年に同法改定が国会で審議・可決され、新LEPとして2006年７月に施行された。

また、1994年10月にLEP実施のための政令（Government Decree No.175/CP）が制定され、その後　環境違反への罰則規定や事業計画段階で実施するSEA、事業実施（F/S）段階で実施する環境影響評価（Environmental Impact Assessment：EIA）等の法規制が制定された。

さらに1995年になると、騒音、大気質、排水、水質、排ガス等の排出基準や環境基準値を定めたベトナム基準（Vietnam Standards：TCVN）が規定された。しかしながら、MONREによると各規制値は現状を必ずしも反映しておらず、排出基準等については見直しが検討されている。

表２－50に主な環境法規を示す。

表２－50　主な環境及び社会配慮関連法規（１／３）

	法規名	概要
1	The Constitution 1992 of SVN	The country Constitution 1992 defines: “All governmental agencies, army units, socio-economic organizations and individuals must conform state laws and regulations concerning the proper use of natural resources and environment. Any activity that harms the environment and resource should be strictly prohibited. （Article 29）
2	Law on Environmental Protection （2005）	The Law on Environmental Protection was approved by the Parliament of Socialist Republic of Vietnam on December 12th 2005 and took effect on July 1st 2006. This law is the demonstration of environmental and resource protection defined by the Constitution. It helps improving state administration and responsibilities of army units, socio-economic organizations and individuals in environmental protection to ensure the good health of citizens and the civil rights to live in the good environment. The Law consists of 15 chapters, 136 Articles, covering a wide range of issues: general provisions （chapter 1）, environmental standards （C 2）, Strategic environmental assessment, environmental impact assessment and environmental protection commitment （Ch. 3）, conservation and rational use of natural resources （Ch.4）; environmental protection in production, business, and service activities （Ch.5）, Environmental protection in urban centers and residential areas （ch.6）; protection of marine, river and other water source environment （Ch.7）; waste management （Ch.8）; prevention of, and response to environmental incidents, and pollution remedy and environmental rehabilitation （Ch.9）; environmental monitoring and information （Ch.10）, resource for environmental protection （Ch.11）; international cooperation in environmental protection （Ch.12）, responsibilities of state management agencies, Vietnam fatherland Front and its member organizations for environmental protection （Ch.13）, Inspection, handling of violations, settlement of complaints and denunciations related to environment, and compensation for environmental damage （Ch.14）, implementation provisions （Ch.15）. Up to now, the Law on Environmental Protection 2005 is still the umbrella law and the most comprehensive legal base relating to many environmental issues such as prevention and mitigation of environmental degradation, pollution and environmental hazards.
3	Decree No 80/2006/NĐ-CP, dated 9/8/2006	Decree No 80/2006/NĐ-CP of the government detailing and regulating the implementation of the law on Environment Protection consists of 3 chapters and 25 articles, which is divided into: chapter 1: general provision; chapter 2: Detailed provisions on: 1） environmental standards; （2） strategic environmental assessment, environmental impact assessment and environmental protection commitment; （3） environmental protection in production, busyness and services activities, （4） waste management, （5） others provisions; chapter 3:implementation provisions. For screening purposes, Appendix 1 provides a List of projects required for environmental impact assessment; and appendix 2 – list of projects, its EIA reports should be appraised and approved by MONRE.
4	Circular 08/2006/TT-BTNMT, I2/06/2006,	This Circular guides in detail the implementation of the contents of strategic environment assessment, environmental impact assessment and environment preserving commitment stipulated in the Law on preserving the environment and in the Decree No.80/2006/ND-CP of the Government stipulating in detail and guiding the implementation of several articles of the Law preserving the environment, includes: ・ Establish, appraise the report on strategic environment assessment; ・ Establish, appraise and approve the report on environmental impact assessment; and supplementary environmental impact assessment; ・ Establish, register and confirm the environment-preserving commitment; Implement and examine the implementation of the environment-preserving content in the report on environmental impact assessment and supplementary environmental impact assessment that have been approved as well as the attached requirements of the approving decision in the environment-preserving commitment that has been approved and the attached requirements of the approval.
5	Law on Land, promulgated on 26/11/2003	Land is the most important components of the environment. It is a special resource. On December 26th2003, the Parliament of the Socialist Republic of Vietnam approved the new Law on Land, which replaces Law on Land 1993. The Law defines that land belongs to all citizens and the State is representative owner （Article 5）. Based on purposes of use, land can be classified in 3 categories: （a） agricultural land （land for perennial plants, production and protection forests, special forests and aquaculture etc.）; （b） non-agricultural land （residential land in urban and rural areas, office and construction land etc.）; （c） unused land including unspecified purpose land – Article 13. Two important types of land in environmental, ecological and biological protection are protection forest land and special forest land - Chapter III: Regulation on utilization of different types of land （Article 76 and Article 77）. In the Law on Land 2003, all acts including transgression, un-use or use for wrong purposes, violation of public plans and planning, land deterioration and improper conformation of the law with respect to the rights and responsibilities of land users are strictly prohibited. （Article 15）.
6	Law on Water Resource, 1998	The Law on Water Resource dated August 20th 1998 defines the management, protection, exploration and utilization of water resources and prevention, mitigation damages and disasters caused by water. Decree No 179/1999/ND-CP dated December 30th 1999 on the implementation of the Law on water resource

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表２－50　主な環境及び社会配慮関連法規（２／３）

	法規名	概要
7	Law on Forest Protection and Development, amended on 14/12/2004	The Law on Forest Protection dated December 3rd 2004 includes 8 chapters and 88 article. Specifications of the international conventions that were ratified by Vietnam are also in the Law on Forest. In the chapter of forest protection, there are regulations on （a） forest ecologies, （b） fauna and flora, （c） fire and harmful species prevention and extinguishment and （d） trade, transport, import and export; temporary export and re-import of fauna and flora. Forest exploration and hunting should follow the regulations. Rare species and genetic sources should be protected and managed under special conditions. Environmental impact assessment reports should be carried out in the case of projects that have potential effects on forest ecologies. Forest development and utilization is defined clearly in the Law. Forest exploration and utilization must be done parallel with forest development, environmental and biodiversity protection. According to the law, forest can be classified into 4 categories, in which the most 2 important categories include protection forests （upstream forests, wind and sand shield forests, wave shield forests and environmental protection forests） and special forests （for nature conservation, standardization for national forest ecology, genetic resource, for scientific research, tourism, entertainment and protection）. There are three main principles in development and utilization of special forests: （a） to ensure the natural development and protection of biodiversity and landscape; （b） national parks and nature conservation parks should be defined into strictly protected areas, ecological rehabilitation areas, service and administration areas ands buffer zones; （c） all activities in special forests must be permitted by forest owners and follow forest management regulations.
8	Decree No 109/2003/ND-CP on protection and sustainable development of wetlands	In Decree No 109/2003, organizations and individuals have activities in the wetlands should obey regulations on protection and sustainable development of wetlands defined in this Decree. Article 12 defines that protected areas of wetlands should be determined. Wetland protection areas should be established such as RAMSAR parks, nature conservation parks etc. Wetland protection areas should be strictly protected; people migration from outside is prohibited; construction of projects that have large effects on the protected areas should be banned （Article 14）. In Circular No 18/2004/QD-BTNMT dated April 2nd 2004 of Ministry of Natural Resources and Environment providing guidance for enforcement of Decree No 109/2003/ND-CP, it defines that there should be management regulations for each wetland protection area including prohibitions, management and development measures, development of functional areas and buffer zones, management of tourism, scientific research and other activities in the wetland protection areas. To 2006, inventory and planning of protection and sustainable development of wetlands in the whole country should be completed. Besides, it is necessary to make zoning of protected wetlands and establish new wetland protection areas for national and international endangered wetlands and adjust the boundary of existing protection areas. ▪ Conservation areas of inland water and marine To manage the aqua environment, the Government made planning of conservation areas of inland water and marine （national parks and conservation areas） – Law on Aquaculture No 17/2003/QH11, approved by the Parliament on November 26th 2003）.
9	Law on Construction 2003	Law on Construction which consists of 9 chapters and 123 articles was approved by the Parliament of the Socialist Republic of Vietnam on November 26th 2003. The law defines regulations on construction activities, rights and responsibilities of organization and individuals who invest and carry out construction activities.
10	Joint Circular No 01/2001/TTLT-BKHCNMT-BXD	Joint Circular No 01/2001/TTLT-BKHCNMT-BXD: Guidance on environmental protection for site selection, construction and operation of landfills.
11	Law on Aquaculture, No 17/2003/QH11 dated November 26th 2003	Objects and effecting scope of the Law on Aquaculture include aquaculture activities of organizations and individuals at mainland, islands, internal water, sea territories, economic privilege areas and continent bench of the Socialist Republic of Vietnam. The law consists of 10 chapter and 62 articles, in which the protection and development of aquatic products are mentioned in Article 7 to 10, chapter II. Closely related to the Law on Environmental Protection, Article 7 defines that all organizations and individuals are responsible for protection of the habitats of aquatic species, activities affecting the habitats, migration and breeding of aquatic species should conform the Law on Environmental Protection and the Law on Water Resources and EIA reports should be carried out for those activities.
12	The Law on Cultural Heritages, 26-9-2001	The Law on Cultural Heritages, 26-9-2001, includes 7 chapters and 74 articles. Cultural heritages consist of material and immaterial heritages. They are the spiritual and material products that have great value in culture and history passing from one generation to another.
13	Vietnam Environmental Standards	On June 25th 2002, former Minister of Science, Technology and Environment established Decision No 35/2002/QD-BKHCNMT in publishing a list of obligatory Environmental Standards. There are 31 Standards concerning air quality, water quality, soil quality, noise and vibration. Permitted levels of gas emissions, wastewater, noise by traffics, noise at the public and residential areas, vibration and shake in construction and industrial production, pesticide contamination in soil etc. were set. Environmental Standards in Construction Sector Decision No 27/2002/QD-BXD dated 23/9/2002 of the Minister of Construction in establishment Vietnam Construction Standards 282-2002: Air at working place; Standards for dust and air pollutants in industry and asbestos products. Decision No 35/2001/QD-BXD dated 26/129/2001 of the Minister of Construction in establishment Vietnam Construction Standards 261- 2001: Landfill- Design Standards. Decision No 22/1999/QD-BXD dated 28/7/1999 of the Minister of Construction in establishment Vietnam Construction Standards for selection criteria of surface and underground water for domestic use.

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表２－50　主な環境及び社会配慮関連法規（３／３）

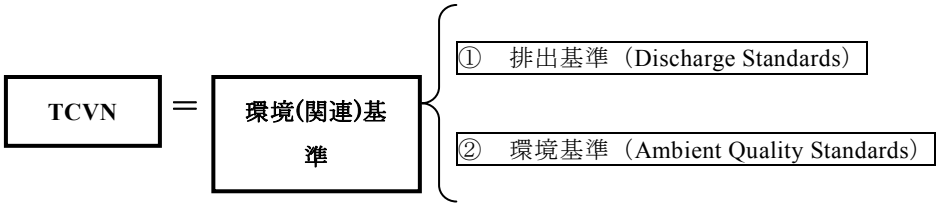
	法規名	概要
14	Vietnam Red Book 1992	Vietnam Red Book is a national document and has international importance. In this book, there are lists of rare species, which are in danger of degradation or extinction that need to be protected, rehabilitated and developed.
15	Decree 67 on wastewater fees	In the State law on fees and charges No 38/2001/PL-UBTVQH of Standing Committee of National Assembly （28/8/2001） and Decree No 57/2002/ND-CP, lists of environmental protection fees are defined including wastewater fees. Followed Decree No 57/2002/ND-CP, on June 13th 2003, Decree No 67/2003/ND-CP on environmental protection fees for wastewater including 3 chapters and 18 articles was established. On December 18th 2003, Ministry of Finance and Ministry of Natural Resources and Environment had issued joint Circular No 125/2003/TTLT-BTC-BTNMT guidance for enforcement of Decree No 67/2003/ND-CP. The main contents of Decree No 67/2003/ND-CP and Circular No 125/2003/TTLT-BTC-BTNMT is specifications of objects and effecting sphere and the fees rates for wastewater.
16	Decree 197/2004/ND-CP dated 03 December 2004	Decree 197/2004/N§-CP dated 03 December 2004 of the government on compensation, assistance and resettlement when reclaiming land by the government. It contains 7 chapters, 51 articles, which cover the following contents: general provisions, land compensations, compensation for properties, assistant policies, resettlement, organization and implementation provisions.

JICA調査団

３）環境分野に関するTCVN

既に記したとおり、排出基準や環境基準を定めたTCVNが制定されている。TCVNは1995年に旧MOSTEが策定した公害に対応する排出基準と、適切な環境基準など、各種の基準が混在した形で規定されていた。その後MONRE発足後に改訂や規定されたものがあるが、TCVN基準制定の原案は科学技術省（Ministry of Science and Technology：MOST）が引き続き策定し、首相の承認を得ることが原則となっている。一方、前項で示したとおり、2002年６月に旧MOSTEがVietnam Environmental Standards（Decision No35/2002/QD-BKHCNMT）を制定し31の環境基準を発効した。また、建設省（Ministry of Construction：MOC）は1999年から建設分野に関する環境基準（Decision～QD-BXD）を制定し、建設事業に係る環境配慮を実施している。このため、TCVN、MOSTE環境基準、QD-BKHCNMTやMOT建設環境基準QD-BXD等の各種基準は、環境評価等をする場合どの基準が適応されるのかについて確認をする必要がある。

一方、MONREのEIA・審査局でTCVNについてヒアリングを行ったところ、TCVNを「環境（関連）基準（Environmental Standards）」と呼び、その中に、①排出基準（Discharge Standards）、②環境基準（Ambient Quality Standards）、③サンプリング基準（Sampling Standards）の３つの基準に分類しているとのことであり、それを図示すると図２－19となる。



出典: MONRE EIA 審査局でのヒアリングにより作図

図２－19　TCVN 基準の MONRE 分類

したがって、TCVNを使用する場合はTCVN番号及び基準値、過去の事例等を見て環境基準か排出基準として使用されているのか判断する必要がある。いずれにせよ、環境分野に関するTCVNのいくつかのものが環境基準として使用されているのが現状であり、TCVN基準の取り扱いには注意を要する。また、2006年のLEP改定を踏まえ、MONREによると、TCVNも修正する動きがあり、その点にも留意が必要となる。表２－51に入手したTCVNのリストを示す。

なお、TCVNの騒音及び大気質の中で太字にした基準はMOSTEが（2002年６月25日付35/2002/QD-BKHCNMTで）特に重要であると宣言した基準である（2003年１月１日にMONREが追認済み）。この「特に環境に対し重要であると宣言した基準」のうち、運輸交通セクターにかかわる基準としては以下の２基準が指定されている。

・騒音基準（TCVN−5948−1999：Noise emitted by accelerating road vehicles- Permitted maximum noise level）
・一般車両排気ガス排出基準（TCVN−6438−2001：Maximum permitted emission limits of exhaust gas）

表２－51　TCVN（１／４）（水質に関する基準）

TCVN	分野	基準内容
5942-1995	Water quality	Water quality-Surface water quality standards
5943-1995	Water quality	Water quality-Coastal water quality standards
5944-1995	Water quality	Water quality-Ground water quality standards
5945-1995	Water quality	Industrial waste water-Discharge
6772-2000	Water quality	Domestic wastewater standards
6773-2000	Water quality	Guidelines for irrigation
6774-2000	Water quality	Freshwater quality guidelines for protection of aquatic sites
6980-2001	Water quality	Standards for industrial effluents discharged into rivers used for domestic water supply
6981-2001	Water quality	Standards for industrial effluents discharged into lakes used for domestic water supply
6982-2001	Water quality	Standards for industrial effluents discharged into rivers used for water sports and recreation
6983-2001	Water quality	Water Quality Standards for industrial effluents discharged into lakes used for water sports and recreation
6984-2001	Water quality	Water Quality - Standards for industrial effluents discharged into rivers used for protection of aquatic life
6985-2001	Water quality	Standards for industrial effluents discharged into lakes used for protection of aquatic life
6986-2001	Water quality	Standards for industrial effluents discharged into coastal waters used for protection of aquatic life
6987-2001	Water quality	Standards for industrial effluents discharged into coastal waters used for water sports

出典：MOST
MONRE
Vietnam Environment Monitor 2003 WB, DIDA, MONRE

表２－51　TCVN（２／４）（騒音基準）

TCVN	分野	基準内容
3985-1999	Acoustic	Allowable noise levels at workplace
5948-1999	Acoustic	Noise emitted by accelerating road vehicles-Permitted maximum noise level
5949-1998	Acoustic	Noise in public and residential areas. Maximum permitted noise level
6399-1998	Acoustic	Description and measurement of environmental noise, Part 2: Acquisition of data pertinent to land use
6435-1998	Acoustic	Measurement of noise emitted by stationary road vehicles – Survey method
6436-1998	Acoustic	Noise emitted by stationary road vehicles- Maximum permitted noise levels
6597-2000	Acoustic	Measurement of noise emitted by two-wheeled mopeds in motion- Engineering method
5948-1995	Acoustic	Noise emitted by accelerating road vehicles- Permitted　maximum noise level
5949-1995	Acoustic	Noise in public and residential areas Maximum permitted noise level
5964-1995	Acoustic	Description and measurement of environmental noise. Part 1: Basic quantities and procedures
5965-1995	Acoustic	Description and measurement of environmental noise, Part 3: Application to noise limits
5949-1998	**Acoustic**	**Noise in public and residential area Maximum permitted noise level**
5948-1999	**Acoustic**	**Noise emitted by accelerating road vehicles- Permitted maximum noise level**

出典：MOST
MONRE
Vietnam Environment Monitor 2003 WB, DIDA, MONRE

表２－51　TCVN（３／４）（大気質基準）

TCVN	分野	基準内容
5947/1-1996	Air quality	Road vehicle emission standard, Part 1: In- Use vehicle
6137-1996	Ambient air	Determination of the mass concentration of nitrogen dioxide- Modified Griess- Saltzman method
6138-1996	Ambient air	Determination of the mass concentration of nitrogen oxides- Chemiluminescence's method
6152-1996	Ambient air	Determination of the particulate lead content of aerosols collected on filters- Atomic absorption spectrometric method
6157-1996	Ambient air	Determination of the mass concentration of ozone- Chemiluminescence's method
6500-1999	Air quality	Performance characteristics and related concepts for air quality measuring methods
6501-1999	Stationary source emissions	Determination of the mass concentration of nitrogen oxides – Performance characteristics of automated measuring systems
6502-1999	Ambient air	Determination of asbestos fibers- Direct-transfer transmission electron microscopy method
6503/1-1999	Gas turbines	Exhaust gas emission, Part 1: Measurement and evaluation
6503/2-1999	Gas turbines	Exhaust gas emission, Part 2:Automated emission monitoring
6504-1999	Air quality	Determination of the number concentration of airborne inorganic fibers by phase contrast optical microscopy- Membrane filter method
6192-2000	Stationary source emissions	Sampling for the automated determination of gas concentrations
6751-2000	Air quality	Determination of performance characteristics of measurement method
6752-2000	Air quality	Handling of temperature, pressure and humidity data
7171-2002	Air quality	Determination of ozone in ambient air- Ultraviolet photometric method
7172-2002	Stationary source emissions	Determination of the mass concentration of nitrogen oxides- Naphthylenediamine photometric method
7365-2002	Air in workplace	Limit of concentration of dust and air pollutant for cement plants
5498-1995	Air quality	Weight method for determination of atmospheric dust fall
5934-1995	Air quality	Ambient air quality standards
5937-1995	**Air quality**	**Ambient air quality standards**
5938-1995	**Air quality**	**Maximum allowable concentration of hazardous substances in ambient air**
5939-1995	**Air quality**	**Industrial emission standards- Inorganic substances and dusts**
5940-1995	**Air quality**	**Industrial emission standards- Organic substances**
5966-1995	Air quality	General aspects- Vocabulary
5967-1995	Air quality	General aspects. Units of measurement
5968-1995	Air quality	Determination of gaseous sulfur compounds in ambient air- Sampling equipment
5969-1995	Ambient air	Determination of a gaseous acid air pollution index- Titrimetric method with indicator or potentiometric end-point detection
5970-1995	Ambient air	Planning of ambient air quality monitoring
5971-1995	Ambient air	Determination of the mass concentration of sulfur dioxide- Tetrachloromercurate（TCM） para-rosaniline method
5972-1995	Ambient air	Determination of the mass concentration of carbon monoxide- Gas chromatographic method
5973-1995	Air quality	Stratified sampling method for assessment of ambient air quality
5974-1995	Ambient air	Determination of a black smoke index
5975-1995	Stationary source emissions	Determination of the mass concentration of sulfur dioxide. Hydrogen peroxide/barium perchlorate/thorin method
5976-1995	Stationary source emissions	Determination of the mass concentration of sulfur dioxide- Performance characteristics of automated measuring methods
5977-1995	Stationary source emissions	Determination of the mass concentration and mass flow rate of particulate material in gas-carrying ducts-Manual gravimetric method
5978-1995	Stationary source emissions	Determination of the mass concentration of sulfur dioxide in ambient air- Thorin spectro photometric method.
6560-1999	**Air quality**	**Emission standards for health care solid waste incinerators-Permissible limits**
6438-2001	**Road vehicles**	**Maximum permitted emission limits of exhaust gas**
6991-2001	**Air quality**	**Standards for inorganic substances in industrial emission discharged in industrial zones**
6992-2001	**Air quality**	**Standards for inorganic substances in industrial emission discharged in urban regions**
6993-2001	**Air quality**	**Standards for inorganic substances in industrial emission discharged in rural and mountainous regions**
6993-2001	**Air quality**	**Standards for organic substances in industrial emission discharged in industrial zones**
6993-2001	**Air quality**	**Standards for organic substances in industrial emission discharged in urban regions**
6993-2001	**Air quality**	**Standards for organic substances in industrial emission discharged in rural and mountainous regions**

出典：MOST
MONRE
Vietnam Environment Monitor 2003 WB, DIDA, MONRE

表２－51　TCVN（４／４）（土壌汚染基準）

TCVN	分野	基準内容
6124-1996	Soil quality	Determination of DDT residue in soil- Gas liquid chromatographic method （GLC）
6132-1996	Soil quality	Determination of linden residue in soil- Gas liquid chromatographic method
6133-1996	Soil quality	Determination of methyl parathion residue in soil- Gas liquid chromatographic method
6134-1996	Soil quality	Determination of 2,4- D residue in soil- High performance liquid chromatographic method （HPLC）
6135-1996	Soil quality	Determination of fenvalerat residue in soil- High performance liquid chromatographic method （HPLC）
6136-1996	Soil quality	Determination of diazinon residue in soil- Gas liquid chromatographic method （GLC）
6495/1-1999	Soil quality	Vocabulary, Part 1: Term and definitions relating to the protection and pollution of the soil
6496-1999	Soil quality	Determination of cadmium, chromium, cobalt, copper, lead, manganese, nickel and zinc in aqua regia extracts of soil- Flame and electro thermal atomic absorption spectrometric methods.
6497-1999	Soil quality	Determination of the effects of pollutants on soil flora. Effects of chemicals on the emergence and growth of higher plants
6498-1999	Soil quality	Determination of total nitrogen- Modified Kejidahi method
6499-1999	Soil quality	Determination of phosphorus – Spectrometric determination of phosphorus soluble in sodium hydrogen carbonate solution
6642-2000	Soil quality	Determination of organic and total carbon after dry combustion （elementary analysis）
6643-2000	Soil quality	Determination of nitrate nitrogen, ammonium nitrogen and total soluble nitrogen in air- dry soil using calcium chloride solution as extract ant
6644-2000	Soil quality	Determination of organic carbon by sulfochromic oxidation
6645-2000	Soil quality	Determination of total nitrogen content by dry combustion （“elemental analysis”）
6646-2000	Soil quality	Determination of effective cation exchange capacity and base saturation level using barium chloride solution
6647-2000	Soil quality	Pretreatment of samples for physic-chemical analyses
6648-2000	Soil quality	Determination of dry matter and water content on a mass basis- Gravimetric
6649-2000	Soil quality	Extraction of trace elements soluble in aqua regia
6650-2000	Soil quality	Determination of the specific electrical conductivity
6651-2000	Soil quality	Determination of the water-retention characteristic- Laboratory method
6652-2000	Soil quality	Determination of poly-nuclear aromatic hydrocarbons-Method using high-performance liquid chromatography
6653-2000	Soil quality	Biological methods- Determination of nitrogen mineralization and nitrification in soil and the influence of chemicals on these processes
6654-2000	Soil quality	Determination of water content in the unsaturated zone- Neutron depth probe method
6655-2000	Soil quality	Determination of carbonate content- Volumetric method
6656-2000	Soil quality	Determination of water-soluble and acid-soluble sulfate
6845-2001		Guide for the inclusion of environmental aspects in product standards
6856/1-2001	Soil quality	Determination of soil microbial biomass Part 1: Substrate-induced respiration method
6856/2-2001	Soil quality	Determination of soil microbial biomass Part 2: Fumigation-extraction method
6857-2001	Soil quality	Simolified soil description
6858-2001	Soil quality	Guidance on laboratory testing for biodegradation of organic chemicals in soil under aerobic conditions
6859/2-2001	Soil quality	Effects of pollutants on earthworms（Eisenia fetida） Part 2: Determination of effects on reproduction
6860-2001	Soil quality	Determination of dry bulk density
6861-2001	Soil quality	Determination of pore water pressure-Tensiometer method
6862-2001	Soil quality	Determination of particle size distribution in mineral soil material- Method by sieving and sedimentation
6863-2001	Soil quality	Determination of particle density
6864-2001	Soil quality	Determination of the potential cation exchange capacity and exchangeable cations using barium chloride solution buffered at pH= 8,1
6865-2001	Soil quality	Laboratory incubation systems for measuring the mineralization of organic chemicals in soil under aerobic conditions
7209-2002	Soil quality	Maximum allowable limits of heavy metals in the soil
5297-1995	Soil quality	Sampling- General requirements
5299-1995	Soil quality	Method for determinating potential erosion effected by rain
5300-1995	Soil quality	Soil classification based on level of chemical pollutants
5301-1995	Soil quality	Soil record
5302-1995	Soil quality	General requirements for soil reclamation
5941-1995	Soil quality	Maximum allowable limits of pesticide residues in the soil
5960-1995	Soil quality	Sampling Guidance on the collection, handling and storage of soil for the assessment of aerobic microbial processes in the laboratory
5961-1995	Soil quality	Effects of pollutants on earthworms （Eisenia fetida）.Determination of acute toxicity using artificial substrate
5962-1995	Soil quality	Determination of the effects of pollutants on soil flora-Method for the measurement of inhibition of root growth
5963-1995	Soil quality	Determination of dry matter and water content on a mass basis- Gravimetric method
5979-1995	Soil quality	Determination of pH
7369-2004	Soil quality	Determination of mineral oil content-Method by infrared spectrometry and gas chromatographic method
7370-1-2004	Soil quality	Dissolution for the determination of total element content, Part 1: Dissolution with hydrofluoric and perchloric acids
7371-2004	Soil quality	Determination of total sulfur b dry combustion
7373-2004	Soil quality	Index values of total nitrogen content in the soil of Vietnam
7374-2004	Soil quality	Index values of total phosphorus content in the soil of Vietnam
7375-2004	Soil quality	Index values of total potassium content in the soil of Vietnam
7376-2004	Soil quality	Index values of total organic carbon content in the soil of Vietnam
7377-2004	Soil quality	PH value index in the soil of Vietnam

出典：MOST
MONRE
Vietnam Environment Monitor 2003 WB, DIDA, MONRE

４）環境関連国際条約

ベトナムにより批准・署名された環境関連国際条約（一部検討中を含む）を表２－52に示す。

表２－52　ベトナムにより批准・署名された環境関連国際条約

環境に関する国際条約及びその他の合意条項	批准/署名年
UN Environmental Modification Convention （ENMOD）, 1977	1980
Convention concerning the protection of the World cultural and Natural heritage, 1972	1982
World Heritage Convention	1987
IAEA's Convention on Early Notification of a Nuclear Accident, 1986	1987
IAEA's Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, 1986	1987
Agreement on the Network of Aquaculture Centres in Asia and the Pacific, 1988	1989
Convention on wetlands of international importance especially as waterfowl habitat Ramsar, 1971 *** Protocol to Amend the Convention on Wetlands of International Importance especially as Waterfowl Habitat, 1982	1989
International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978 （MARPOL 73/78）	1991
Convention on international trade in endangered species of wild fauna and flora （CITES）	1994
The Montreal Protocol on Substances that deplete the Ozone Layer, 1987 *** London Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, London,1990 *** Copenhagen Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, Copenhagen, 1992.	1994
Vienna convention for the protection of the zone layer, 1985	1994
United Nations Convention on the Law of the Sea, 1982	1994
United nations framework convention on climate change, 1992	1994
Convention on biological diversity	1994
Basel convention on the control of trans-boundary movements of hazardous wastes and their disposal	1995
Agreement for the Establishment of the Asia-Pacific Fishery Commission, 1948	1995
International declaration on cleaner production	1999
Convention on international civil aviation, Chicago, 1944	*
Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological （Biological） and Toxin Weapons and on their Destruction, 1972	*
Outer Space Treaty, 1967	*
Red Cross Protocols Relating to the Protection of Victims of Armed Conflict, 1977	*
FAO International Code of Conduct on the Distribution and Use of Pesticides, 1985	*
UN Framework Convention on Climate Change （UNFCCC） and （the Kyoto Protocol on the Clean Development Mechanism）	1994 （2002）
Cartagena Protocol on Biosafety	2004
UN Convention on the Combating of Desertification （UNCCD）	1998
International Convention on Civil Liability for Oil Pollution Damage, 1969	検討中**
International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969	検討中**
International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971	検討中**
Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, London, 1972	検討中**
Convention on the Conservation of Migratory Species of Wild Animals, 1979	検討中**
Agreement on the Conservation of Nature and Natural Resources, 1985	検討中**
International Convention on Oil Pollution Preparedness, Response, and Co-operation （OPRC）, London, 1990	検討中**

注：* 批准／署名年は、MONREのEIA & Appraisal局によると条約年と同時にベトナム政府は批准／署名済みのことであるが、他省庁が批准等する場合があるため確認が必要となる（MONRE）。
**上記と同様に、MONREのEIA & Appraisal局によると批准されている可能性はあるが確認が必要となる。

出典：ベトナム環境保護庁（VEPA）HP（http://www.nea.gov.vn/english/convention.htm）
UNEP Regional Office for Asia and the Pacific （ROAP） HP （ http://www.rrcap.unep.org/country/cp/seasia/cp_vietnam.cfm）
THE WORLD CONSERVATION UNION, IUCN VIET NAM, “A just world that values and conserves nature" IUCN
Vietnam Environment Monitor 2005 Biodiversity, World Bank, MONRE, Sida

（２）SEAアセスメント及びEIA制度

１）戦略的環境アセスメント（Strategic Environment Assessment：SEA）

ａ）SEAが求められる事業計画等

SEAの実施が必要な事業を表２－53に示す。

表２－53　SEAが必要な事業計画等

1.	National socio-economic development strategies, planning and plans.
2.	Sectoral development strategies, planning and plans of national scale.
3.	Socio-economic development strategies, planning and plans of provinces and cities directly under the Central Government （hereinafter called “Provincial Level”） and regions.
4.	Land-use planning; forest protection and development; other natural resource exploitation and use at least at inter-provincial and inter-regional levels.
5.	Focal economic zone development planning.
6.	Integrated river basin planning at inter-provincial level.

出典：LEP, NATIONAL ASSEMBLY LAW No. 52/2005/QH11

ｂ）SEA報告書の準備条項

SEA報告書の準備条項を表２－54に示す。

表２－54　SEA報告書の準備条項

1.	Agencies that are assigned to formulate projects falling into the categories of projects stipulated in Article 14 of this Law shall have the responsibility to prepare SEA reports.
2.	The SEA report constitutes an integral content of the project and must be prepared concurrently with the formulation of the project.

出典：LEP, NATIONAL ASSEMBLY LAW No. 52/2005/QH11

ｃ）SEA報告書の記載内容

SEA報告書の記載内容を表２－55に示す。

表２－55　SEA報告書の記載内容

1.	General description of project objectives, scales and characteristics relating to the environment.
2.	General description of natural, socio-economic and environmental conditions relating to projects.
3.	Prediction of adverse impacts which are likely to occur during the implementation of projects.
4.	Provision of references on sources of statistics and data, and assessment methods.
5.	Proposing overall directions and solutions to address environmental issues during the implementation of projects.

出典：LEP, NATIONAL ASSEMBLY LAW No. 52/2005/QH11

ｄ）SEA報告書のレビュー及び評価手続き

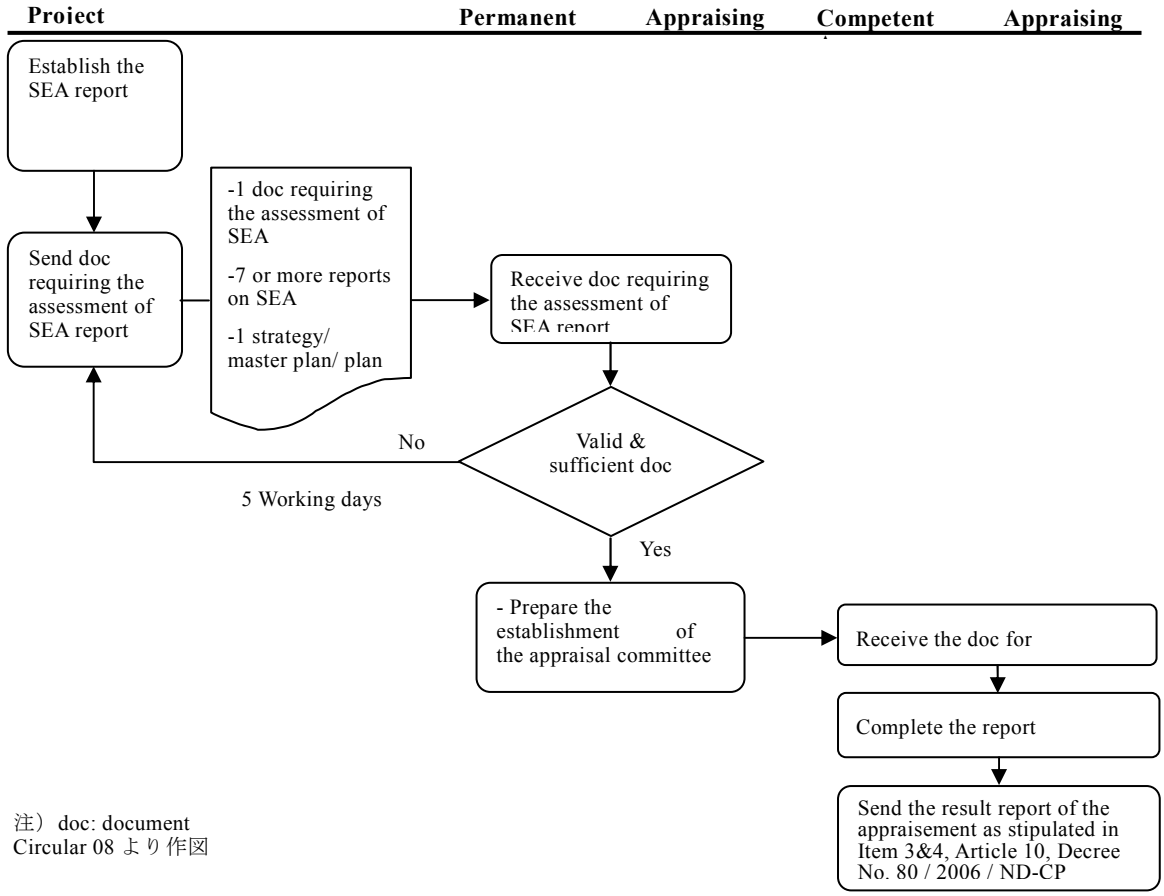
LEPに記されているSEA報告書のレビュー評価手続きを表２－56に整理する。また、SEA実施のガイドラインとしてCircular 08/2006があり、SEA報告書（doc：document）の評価手続きが記載されている。同ガイドラインの記載は文書上でのものであり、評価手続きのフローチャートは整備されてない。

事前調査においては、評価手続きの記載に従い図２－20のとおり作図したが、MONREの公的手続きに基づき承認されたチャートではない旨留意されたい。

表２－56　SEA報告書の報告書のレビュー評価手続き

1.	The strategic environment assessment reports shall be reviewed by a review council established according to the provisions of Paragraph 7 of this Article.
2.	Members of the review council of projects of national and inter-provincial scales shall comprise representatives from agencies that are responsible for project approval; representatives from relevant ministries, ministerial level agencies, Government bodies and provincial level People's Committees; qualified experts whose specific professions are appropriate to the contents and characteristics of specific projects; and representatives from other organizations and individuals decided by the competent agencies that are responsible for establishing the review council.
3.	Members of the review council of provincial level projects shall comprise representatives from provincial level People's Committees; specialized agencies of environmental protection and other relevant provincial departments; qualified experts whose specific professions are appropriate to the contents and characteristics of specific projects; and representatives from other organizations and individuals decided by the competent agencies that are responsible for establishing the review council.
4.	A membership of the review council as stipulated in Paragraphs 2 and 3 of this Article must comprise at least, fifty percent of its members who are qualified in terms of their professional knowledge of environmental protection and of other relevant fields relating to the contents of projects. Those who directly participate in the preparation of strategic environment assessment reports shall not be eligible to the membership of the review council.
5.	Organizations and individuals shall have the rights to submit their requests and recommendations on environmental protection to agencies that are responsible for establishing the review council, and agencies that are responsible for project approval; and the council and agencies responsible for project approval shall be responsible for considering these requests and recommendations before making their conclusions and decisions.
6.	Results of the strategic environment assessment report review shall serve as basis for the approval of the projects.
7.	Responsibilities for establishing the review council of strategic environment assessment reports shall be defined as follows: a. The Ministry of Natural Resources and the Environment shall establish the review council of strategic environment assessment reports of projects that are subject to the approval of the National Assembly, the Government and the Prime Minister; b. Line ministries, ministerial level agencies and Government bodies shall organize the review council of strategic environment assessment reports of projects that are subject to the approval within their competence; c. Provincial level People's Committees shall organize the review council of strategic environment assessment reports of the projects that are subject to the competence of their decision and that of the same level People's Councils.

出典：LEP,　NATIONAL ASSEMBLY LAW No. 52/2005/QH11



注）doc: document
Circular 08 より作図

図２－20　SEA の手続きフローチャート

ｅ）ベトナムのSEAについて

我が国の環境省は、以下に示したEU、国連や我が国等のSEA制度導入に向けた世界の潮流に鑑み、EUのSEA指令に対応した法制度やその他諸外国におけるSEA制度の導入状況を概観することを目的とした、SEA制度導入に関する調査を平成17年度に実施した。

・欧州連合（ＥＵ）：SEA指令によりEU加盟国におけるSEA制度化の義務付け。
・国連欧州経済委員会：SEAに関する議定書の採択等、制度が設けられてきた。

同調査は、全23か国・１地域（香港）〔OECD加盟国（全30か国）の18か国、EU加盟国（全25か国）の13か国、アジア諸国はベトナムを含む６か国・１地域〕を対象国・地域として実施された。その調査項目は以下のとおりである。

・SEA制度の導入状況
・スコーピング手続
・審査
・スクリーニング手続
・ティアリングの取り扱い
・影響評価の内容
・モニタリング・事後評価

以上の調査について、環境省はその結果概要を、平成18年３月に「諸外国の戦略的環境影響評価制度導入状況調査報告書」としてまとめ、一般公開した。このうち、ベトナムのSEAの概要について、同報告書は表２－57のとおり整理している。

（以上、出典：「諸外国の戦略的環境影響評価制度導入状況調査報告書」、平成18年３月、環境省、一部編集）

表２－57　ベトナムのSEA概要表

制度名称		・　環境法GD175/CP ・　回覧490/TT-BKHCNMT（LEP, GD175/CP and Circular No.490/TT-BKHCNMT）
根拠		法令
特徴		環境保護法の一部
制度概要・背景等		SEAの法的枠組みがある。現在のEIA 法がSEAを含み、SEA法とみなされる。環境保護法（LEP）GD175/CPとNo.490/TT-BKHCNMTで、プロジェクトレベルのEIA及び開発地域・セクター・地方・都市・工業地帯におけるマスタープランに対するSEAが不可欠であると定義している。LEPは1993年に成立し、2005年11月19日に改正された。当該法では、投資活動に対する環境影響の早期段階での評価を強調したものであり、環境影響評価プロセスに関する特定の役割を公衆に付与するものでもある。法は規則によって補完され、環境報告書の審査機関や責任、人間の健康に高いリスクを有すると考えられる活動の生活域での実施の制限などがある。環境のダメージに対する負債や補償に関する規則もある。LEPは2006年７月に施行。
対象		
SEA手続	スクリーニング	
	スコーピング	
	影響評価	
	SEA報告書	
	SEA報告書	
	モニタリング・事後調査	
ティアリング		
SEA件数		近年、数件のSEA事例がある。例えば、ハノイベイークワンニン地方のSEA（地理研究所－ベトナム科学技術学会、ベトナム環境と持続可能な開発協会、実施）、タイ、ニュエン地域の戦略的環境アセスメントと社会経済開発計画、クアンニ地区の戦略的環境アセスメントと社会経済開発計画（ハノイ大学エンジニア部、実施）など。

参考：The World Bank, 2006: Environmental Impact Assessment Regulations and Strategic Environmental Assessment Requirements Practices and Lessons Learned in East and Southeast Asia, WB, Environment and Social Development Unit, East Asia and Pacific Region, Discussion Paper.
Briffett, C., Obbard, J. P., and Mackee, J., 2003: Towards SEA for the developing nations of Asia. Environmental Impact Assessment Review, 23, pg.171-196.
Partnership Group for Aid Effectiveness, 2005: Working Together to Improve Aid Effectiveness for Supporting Sustainable Development in Vietnam, in Consultative Group Meeting for Vietnam, Hanoi, December 6-7
Vietnam net Bridge, 2005: National Assembly passes three laws
The Ministry of Science, Technology and Environment of Vietnam, 2002
出典：諸外国の戦略的環境影響評価制度導入状況調査報告書、平成18年３月、環境省

表２－57の整理から、ベトナムのSEAは法令としてLEPの一部である点に特徴があるが、2006年７月に施行されたばかりで、実施件数も多いとはいえないことが理解される。また、SEAの手続きが空欄になっているが、LEPのSEA条項にも手続きについては明記されていない。ただし、Decree 80並びにCircular 08にSEAの手続きが書かれているが概略的な説明であり、SEAの実際的なガイドラインやフローチャートなどの準備は今後の課題となっている。

MONREのEIA審査局でSEAの手続きついて質問をしたところ、Decree 80並びにCircular 08に従って実施するとのことであるが、上記のとおり、ガイドラインとしての手続きが概略的である。特に、SEAで通常求められるステークホルダーミーティングは、事業関係当局、人民委員会、環境専門家などで構成されるSEA評価委員会（コミッティー）を事業ごとに組織し、そこでSEA報告書の内容の妥当性を評価するとのことである。一方、表２－56の３には、その他の個人や組織の代表（representatives from other organizations and individuals）を評価委員会（コミッティー）の構成員とすると記してあるが、実際の SEA時には、対象事業近郊の一般市民まではステークホルダーとして参加させていない可能性がある（これはベトナムの住民登録制度等の社会制

度と深く関係しているとみられるが、 引き続き留意し調査する必要がある)。なお、事業毎にコミッティーを組織しているとのことであり、コミッティーメンバーの詳細は、表２－56の７に記されているが、実際どのように選定が行われているのかはSEAが施行されたばかりであるため、表２－57のSEAの概要表に記載されている過去のSEA調査事例等を入手し、参照する必要がある。

また、EIA審査局によると、環境の専門家も少ないためSEAの評価委員会（コミッティー）を組織する現状では困難を伴っているとのことである。したがって、SEAについては今後MONRE並びにVEPAへの人材育成やキャパシティーディベロップメントに係る技術協力やカウンターパート研修等の必要性が考えられ、本格調査においても十分に留意すべき点である。

なお、LEP、Decree 80、Circular 08の環境関連法規を、より現実に即した実効性を伴うものとするよう、再度見直しを開始したとのことであり、2007年末までに新しい環境関連法規を完成させる予定であるとの説明を受けた。この改定見直しについては、本格調査時において十分に確認する必要がある。

ｆ）VINTRANSS２におけるSEAの取り扱いについて

本項目ａ）からｅ）で整理したとおり、ベトナムのSEAの実施の現状を再度整理すると以下のとおりとなる。

・SEA制度は施行されてから日が浅く、関係機関としても経験に乏しい。
・SEA導入により、初期環境影響評価（Initial Environmental Examination：IEE）を実施する必要がなくなった。
・スコーピング作業のタイミングや、SEAからEIAへの段階的実施のため（あるいは重複を避けるため）のティアリング手続き等に関する条項やガイドラインの内容が十分とはいえない。

すなわち、環境社会配慮に係る当局による実務の経験や制度面の整備が現状では十分でないと評価される。一方、本格調査で検討されるのはベトナム全土を対象とした戦略や各プロジェクト計画案であり、上記ａ）で示したとおりSEAの実施が求められることになる。ただし、SEAはスコーピングを行う必要があるIEEとは違い、MONREあるいは省天然資源環境局（Department of Natural Resources and Environment at Provinces：DONRE）〔両機関の詳細については（４）環境行政実施体制参照〕によって承認を受ける必要があり、また本格調査完了後に行われる可能性のあるF/S調査と並行して実施されるであろうEIAのために必要な手続きでもある。

本調査においては、カウンターパートであるMOT側がSEAを作成すべきであるが、既述のとおり、SEAの実施については関連機関の能力に限界がある等課題が多い。このため本格調査で検討される戦略や計画策定に対するSEAの実施に際しては、以下の点を行う。

・対象とすべき事業計画の整理と、それに対するSEAの手続きの確認
・評価すべき環境項目の選定や、各項目の環境社会影響の度合いを評価するためのスコーピング
・環境社会影響の度合いの評価結果の事業計画へのフィードバック

以上の３点について本格調査では、MOT環境部、MONRE及びベトナム環境保護庁（VEPA）等関連機関と十分な検討を行い、SEA実施に必要な情報提供や技術的なアドバイス等を行う程度にとどめる旨をベトナム側の関連機関に対し理解させることが必要となる。

なお、環境社会配慮の関連機関としては表２－66及び表２－81に示したとおりであるが、この中で特に注意を要する機関は以下のとおりである。

・MOST：MOT環境部によれば、環境関連基準（TCVN）は現在でもMOSTが策定・改定をしており、本格調査では最新の情報を確認し、整理する必要がある。（表２－50の項目13参照）
・MOC：建設省令としてベトナム建設基準を策定しているため、環境関連基準（TCVN）との整合性について、十分に注意を払う必要がある。（表２－50の項目13参照）
・農業地方開発省（MARD）：特に生物多様性に関し、MARDは農業、森林及び地方の開発全体を監督する責務を持ち、また住民移転に伴う地方の土地収用等（表２－64及び表２－65参照）について関連法規等を再度確認し整理する必要がある。

２）環境影響評価制度（Environmental Impact Assessment：EIA）

ベトナムでEIAが最初に規定されたのは、1994年に施行された旧環境保護法（LEP）であり、その実施に関しては旧LEPの第17条と第18条、LEPの実施のための政令（Government Decree No.175/CP）を制定し、その第９条から第20条の規定などによりEIAの手続き、環境影響評価を必要とする事業、審査機関、報告書の記載事項等についての規制の根拠が記載されている。

「（１）の２）環境関連法規」で環境保護法（LEP）について記したとおり、ベトナムでは新LEPが2006年７月に施行され、その第３章（CHAPTER III）に以下のとおり３つの環境影響評価に関する条項が記されている。

・第１項：戦略的環境アセスメント（SEA：Strategic Environmental Assessment）
・第２項：環境影響評価（EIA：Environmental Impact Assessment）
・第３項：環境保全意思表明書（EPC：Environmental Protection Commitment）

ａ）EIA実施が必要な事業

新LEPで規定されている、EIA報告書の作成が必要な事業はLEPの第２項Article18に記されており、表２－58に示す。

表２－58　EIA報告書作成が必要な事業

a)	Projects of national importance
b)	Projects that use part of land of, or are likely to cause adverse impact to, natural reserves, national parks, historical-cultural relics, natural heritage and famed beauty spots that are designated
c)	Projects that are likely to impose risks of adverse impacts on water resources of river basins, coastal areas and protected ecosystem areas
d)	Projects on infrastructure development in economic areas, industrial parks, hi-tech parks, export- processing zones and craft village clusters
e)	Projects on new urban center and centered residential area development
f)	Projects on large-scale groundwater and other natural resources exploitation and use
g)	Other projects that may impose potential risks of adversely environmental impacts

出典：LEP（29/2005/L/CTN）Section 2, Article 18,（http://www.nea.gov.vn/luat/luat_eng/toanvan/Luat_MT_29-05_L-TN_Eng.htm）

また、Decree No.80/2006/ND-CPはEIA報告書作成が必要な事業として表２－59に示したとおり102事業を詳細にリストアップし、MONREがEIA報告書の評価・承認を担当する事業を明確にしている。なお、運輸交通分野でEIAが必要な事業及び規模は、表２－59のNo.12からNo.22の11事業が指定されている。

表２－59　EIA報告書作成が必要な事業リスト（１／２）

番号	事業	事業規模
1	Projects on key national works	All
2	Projects using part or the whole of land areas of or adversely affecting nature conservation zones, national parks, historical-cultural relic areas, natural heritages and famous scenic places, ranked or not yet ranked, which are protected under decisions of provincial/municipal People's Committees	All
3	Projects involving risks of directly and badly affecting water sources in river basins, coastal areas and areas having protected eco-systems	All
4	Projects on nuclear power plants	All
5	Projects on thermonuclear power plants	All
6	Projects on building nuclear reactors	All
7	Projects on building production, business and service establishments using radioactive substances or discharging radioactive wastes	All
8	Projects on building telecommunications facilities	All
9	Projects on building infrastructures in urban centers or residential areas	All
10	Projects on building infrastructures in industrial parks, hi-tech parks, industrial clusters, export-processing zones or trade village clusters	All
11	Projects on building infrastructures in economic and commercial zones	All
12	Projects on building, renovating and upgrading motorways, grade4, grade-II and grade-III roads	All
13	Projects on building grade-IV roads	50 km or more in length
14	Projects on building, upgrading and renovating railways	100 km or more in length
15	Projects on building permanent road and railway bridges	200 m or more in length （excluding the length of access roads）
16	Projects on building, upgrading and renovating traffic works	Requiring resettlement of 2,000 or more people
17	Projects on building and repairing ships	Ships with a tonnage of 1,000 DWT or more
18	Projects on plants of building, repairing and assembling locomotives and automobiles	Design capacity of 500 vehicles or more per year
19	Projects on constructing, renovating and upgrading river ports and seaports	For ships with a tonnage of 1,000 DWT or more
20	Airports and airfields	All
21	Projects on building subways and tunnels	500 m or more in length
22	Projects on building overhead railways	2,000 m or more in length
23	Projects on exploitation of oil and gas	All
24	Projects on petrochemical refineries （except projects on LPG extraction and lubricant preparation）	All
25	Projects on building oil and gas pipelines	All
26	Projects on petrol depots	Capacity of 1,000 m3 or more
27	Projects on production of petrochemical products （surfactants, plasticizers, methanol）	All
28	Projects on vessel clean-up	All
29	Projects on building oil and gas entrepots	All
30	Projects on thermo power plants	Capacity of 50 MW or more
31	Projects on hydropower plants	Reservoir with a capacity of 1,000,000 m3 or more
32	Projects on building high-voltage power lines	50 km or more in length
33	Projects on iron, steel and non-ferrous metals rolling and refining plants	Design capacity of 5,000 tons or more of products per year
34	Projects on plastics plants	Design capacity of 1,000 tons or more of products per year
35	Projects on chemical fertilizer plants	Design capacity of 10,000 tons or more of products per year
36	Projects on warehouses of chemicals and plant protection drugs	Capacity of 10 tons or more
37	Projects on paint and base chemical plants	Design capacity of 1,000 tons or more of products per year
38	Projects on detergent and additive plants	Design capacity of 1,000 tons or more of products per year
39	Projects on plant protection drug plants	Design capacity of 500 tons or more of products per year
40	Projects on rubber latex processing plants	Design capacity of 10,000 tons or more of products per year
41	Projects on rubber processing plants	Design capacity of 1,000 tons or more of products per year
42	Projects on pharmaceutical and cosmetics plants	Design capacity of 50 tons or more of products per year
43	Projects on plants to manufacture car and tractor tires and tubes	Design capacity of 50,000 or more of products per year
44	Projects on accumulator plants	Design capacity of 50,000 kWh or more per year

表２－59　EIA報告書作成が必要な事業リスト（２／２）

番号	事業	事業規模
45	Projects on cement plants	Design capacity of 500,000 tons or more of cement per year
46	Projects on tile and brick plants	Design capacity of 20 mil. tiles and bricks or more per year
47	Projects on plants to produce other construction materials	Design capacity of 10,000 tons or more of products per year
48	Projects on exploitation of construction materials （earth, rock, sand and gravel） on the mainland	Design capacity of 50,000 m3 or more of materials per year
49	Projects on exploitation, dredging and full extraction of construction materials from river beds （sand and gravel）	Design capacity of 50,000 m3 or more of materials per year
50	Projects on exploitation of solid minerals （without using chemicals）	Volume of 100,000 m3 or more of solid minerals, earth and rock per year
51	Projects on exploitation and processing of solid minerals containing hazardous substances or involving the use of chemicals	All
52	Projects on processing of solid minerals	Design capacity of 50,000 tons or more of products per year
53	Projects on exploitation of groundwater	Design capacity of '1,000 m3 or more of water per day and night
54	Projects on exploitation of surface water	Design capacity of 10,000 m3 or more of water per day and night
55	Projects on food processing plants	Design capacity of 1,000 tons or more of products per year
56	Projects on frozen aquatic product processing plants	Design capacity of 1,000 tons or more of products per year
57	Projects on sugar plants	Design capacity of 20,000 tons or more of sugarcane per year
58	Projects on alcohol and spirit plants	Design capacity of 100,000 liters or more per year
59	Projects on beer and beverage plants	Design capacity of 500,000 liters or more of products per year
60	Projects on monosodium glutamate giants	Design capacity of 5,000 tons or more of products per year
61	Projects on milk processing plants	Design capacity of 10,000 tons or more of products per year
62	Projects on coffee processing plants	Design capacity of 5,000 tons or more of products per year
63	Projects on cigarette plants	Design capacity of 50,000 packs or more per year
64	Projects on slaughter plants/houses	Design capacity of 100 cattle or 1,000 poultry or more per day
65	Projects on ice plants	Design capacity of 500 ice bars or more per day and night or 25,000 kg or more of ice water per day and night
66	Projects on cereals processing mills	Design capacity of 10,000 tons or more of products per year
67	Projects on manioc processing mills	Design capacity of 1,000 tons or more of products per year
68	Projects on leather tanning plants	All
69	Projects on dyeing textile plants	All
70	Projects on non-dyeing textile plants	Capacity of 10,000, 000 m of fabric per year
71	Projects on mechanical and engineering plants	Design capacity of 1,000 tons or more of products per year
72	Projects on timber and plywood processing plants	Design capacity of 100,000 m2 or more per year
73	Projects on plants to manufacture electric and electronic appliances	Design capacity of 10,000 or more appliances per year
74	Projects on plants to manufacture electric and electronic components	Design capacity of 10,000 tons or more of products per year
75	Projects on plants to produce fine art articles	Design capacity of 1,000,000 tons or more of products per year
76	Projects on constructing reservoirs and irrigation lakes	Capacity of 1,000,000 m3 of water or more
77	Projects on building irrigation and anti-salinization systems	Covering an area of 500 ha or more
78	Projects on sea progradation dykes	All
79	Projects on aquaculture zones: intensive semi-intensive farming	Water surface area of 10 ha or more
80	Projects on extensive aquaculture	Water surface area of 50 ha or more
81	Projects on aquaculture on sand	All
82	Projects on cattle farms	100 cattle heads or more
83	Projects on poultry farms	10,000 poultry heads or more
84	Projects on feed processing plants	Design capacity of 10,000 tons or more of products per year
85	Projects on forestation and forest exploitation	Area of 1,000 ha or more
86	Projects on building concentrated cassava and sugarcane	Area of 100 ha or more growing zones
87	Projects on building coffee growing zones	Area of 100 ha or more
88	Projects on building tea growing zones	Area of 100 ha or more
89	Projects on building rubber growing zones	Area of 200 ha or more
90	Projects on building tourist and entertainment resorts	Area of 5 ha or more
91	Projects on building golf courses	18 holes or more
92	Projects on building hotel and rest-home complexes	50 rooms or more
93	Projects on building hospitals	50 patient beds or more
94	Projects on plants to re-process and treat ordinary solid wastes	All
95	Projects on building dumping sites for industrial and	All
96	Projects on building dumping sites for garbage hazardous wastes	For 100 households or more
97	Projects on building concentrated industrial wastewater treatment systems outside industrial parks, export- processing zones and hi-tech parks	Design capacity of 1,000 m3 or more of wastewater per day and night
98	Projects on building concentrated daily-life wastewater	Design capacity of 1,000 m3 or more treatment systems of wastewater per day and night
99	Projects on building incinerators	All
100	Projects on building cemeteries	Area of 15 ha or more
101	Projects involving the use of part of headwater protective forest, breakwater forest, sea progradation forest or special purpose forest areas	Area of 5 ha or more
102	Projects involving the use of part of natural forest areas	Area of 50 ha or more

出典：Decree No. 80/2006/ND-CP, Appendix I, MONRE

なお、多部門（Sector）及び省（Province）間にわたる事業のEIA報告書の評価及び承認はMONREが担当する。Government's Decree No.80/2006/IND-CP of August 9, 2006のAnnex IIにEIA報告書作成が求められる事業リストが表２－60のとおり公布されている。なお、事業リストの事業内容、事業規模に該当するEIA報告書の評価及び承認の担当はMONREとなる。

表２－60　MONREが審査・承認を担当するEIA報告書が必要な多部門・省間事業リスト

番号	事業	事業規模
1	Projects involving the use of part or the whole of land areas of national parks, nature conservation Zones, biosphere reservation zones, world heritages and historical-cultural relics areas which are of national grade.	All
2	Projects on nuclear power plants, thermonuclear plants and nuclear reactors	All
3	Projects on thermal power plants	with a design capacity of between 300 MW and under 500 MW, located less than 02 km away from urban centers and residential areas
4	Projects on other thermal power plants	with a capacity of 500 MW or more
5	Projects on hydropower plants and irrigation works	with reservoir capacity of 100,000,000 m3 or more of water or affecting the sources of supply of surface and groundwater of two or more provinces and centrally-run cities .
6	Projects involving the destruction of headwater protective forests, breakwater forests, sea progradation forests or special-purpose forests	20ha or more or involving the destruction of other natural forests of 200 ha or more according to the Government-approved planning on conversion of land use purposes.
7	Projects on aquaculture on sand	covering an area of 100 ha or more

出典：Decree No. 80/2006/ND-CP, MONRE, Appendix II, MONRE

これらリスト以外の事業（例：１省内で一定規模以下な事業等）は、原則各省（Province）の責任で実施され、各省の人民委員会（Provincial Peoples Committee：PPC）の指導監督によりDONREがEIA報告書を評価し承認する。

ｂ）EIA報告書の作成と記載内容

EIAに記すべき内容は、表２－61のとおりLEP のSection２、Article 20に明記されている。

表２－61　EIA報告書の記載内容

1.	Listing and detailed description of works and items of projects with information on spatial and temporal scales and construction workloads; and technologies that would be applied to operate each of works, items and projects as a whole.
2.	General assessment of the current state of the environment at project sites and in the vicinity of sites; of the sensitivity and carrying capacity of local environments.
3.	Comprehensive assessment of potential environmental impacts that are likely to be caused during the implementation of projects, and of environmental components and socio-economic factors that are likely to be directly affected by projects; and prediction of risks of environmental incidents that may be imposed by projects;
4.	Specific measures for adversely environmental impact minimization; and environmental incident prevention and response.
5.	Commitments to take environmental protection measures during the construction and operation of projects.
6.	Lists of works and programmes on the management and monitoring of environmental issues during the implementation of projects.
7.	Estimation of costs incurred in the construction of environmental protection works and/or facilities within the total estimated budget of projects.
8.	Comments from the People's Committees at communal, quarter and/or township level （hereinafter called "Communal Level"） and representatives from residential communities where the implementation of projects takes place; objections to the location of projects at localities or to proposed environmental protection solutions, must be included into the environmental impact assessment reports.
9.	Provision of references on sources of statistics and data, and assessment methods.

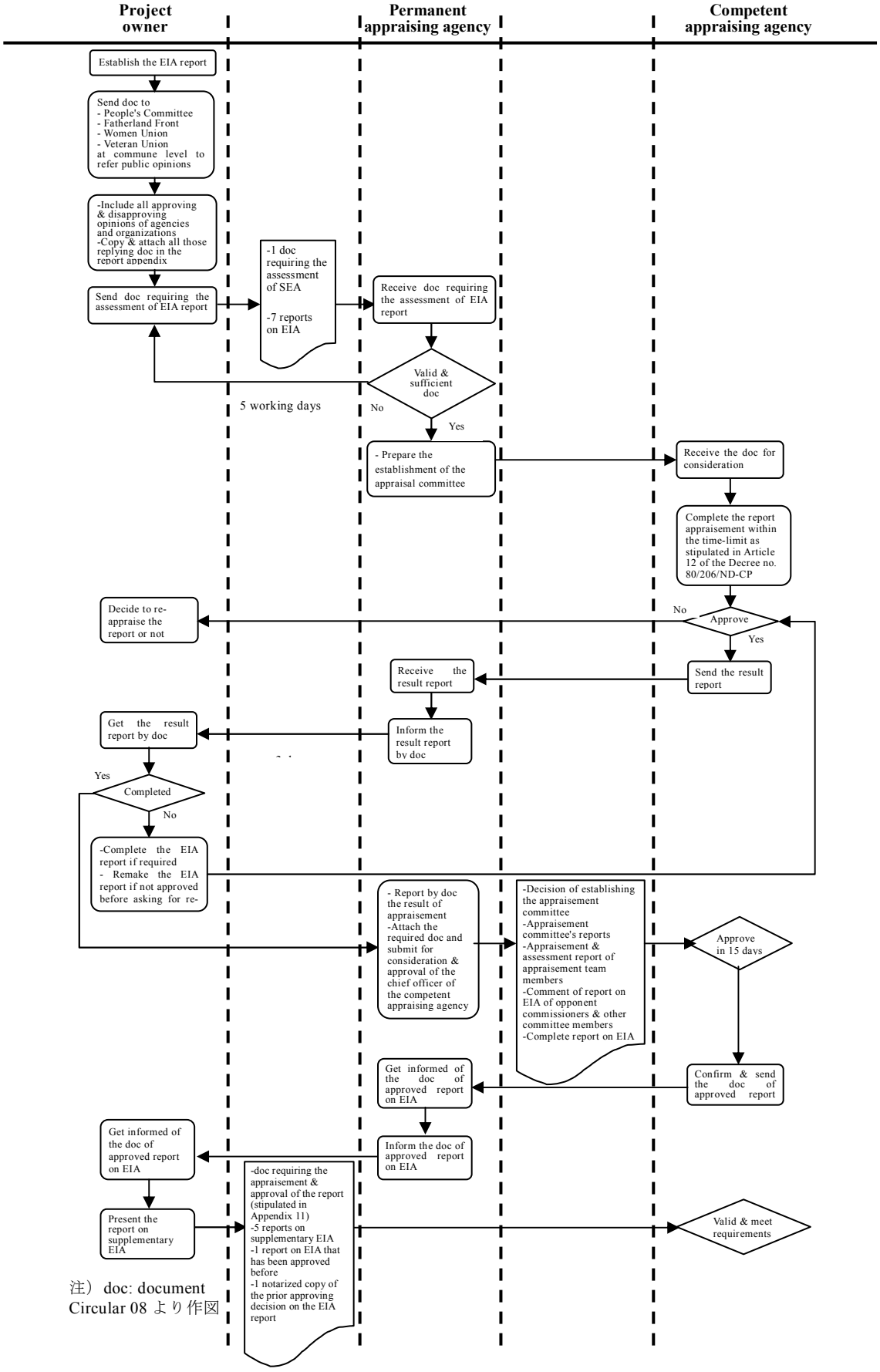
出典：LEP 2005

c）EIA報告書の評価

LEPに記されているEIA報告書のレビュー評価手続きを表２－62に整理する。また、EIA実施のガイドラインとしてCircular08/2006があり、EIA報告書（doc: document）の評価手続きが記載されている。ただし、同ガイドラインのその記載は文書であり、同評価手続きのフローチャートは整備されてない。

事前調査においては、評価手続きの記載に従い図２－21のとおり作図したが、MONREの公的手続きに基づき承認されたチャートではない旨留意されたい。

なお、LEP（29/2005/L/CTN）Section２、Article 21に評価手順及び評価者等が記されている（表２－62）。



注）doc: document
Circular 08 より作図

図２－21　EIA 報告書評価・承認フローチャート

表２－62　EIA報告書のレビュー評価

1	The review of environmental impact assessment reports shall be performed by a review council or a review service organization. The Ministry of Natural Resources and the Environment shall specify terms of, and provide guidance for implementing the review of environmental impact assessment reports by the review service organization.
2	Members of the review council for projects that fall under Items （a） and （b）, Paragraph 7 of this Article, shall comprise representatives from agencies that are responsible for project approval and their environmental protection agencies; environmental protection agencies at provincial level where projects are implemented; qualified experts whose specific professions are appropriate to the contents and characteristics of specific projects; and representatives from other organizations and individuals decided by the competent agencies that are responsible for establishing the review council.
3	Members of the review council for projects that fall under Item （c）, Paragraph 7 of this Article shall comprise representatives from the provincial level People's Committees; provincial environmental protection agencies and relevant provincial line departments; qualified experts whose specific professions are appropriate to the contents and characteristics of specific projects; and representatives from other organizations and individuals decided by the competent agencies that are responsible for establishing the review council. In necessary case, the provincial level People's Committees may invite representatives from the Ministry of Natural Resources and the Environment, other relevant ministries, ministerial level agencies and Government bodies to represent as members at the review council.
4	A membership of the review council as stipulated in Paragraphs 2 and 3 of this Article must comprise at least fifty percents of their members who are qualified in terms of professional knowledge of environmental protection and of other relevant fields relating to the contents of projects. Those who directly participate in the preparation of environment assessment reports shall not be eligible to the membership of the review councils.
5	Review service organizations shall be eligible to take part in the review according to decisions made by agencies that are responsible for the project approval, and must be liable for their comments and conclusions made on the review.
6	Organizations, residential communities and individuals shall have the rights to submit their requests and recommendations on environmental protection to agencies responsible for establishing the review council as stipulated in Paragraph 7 of this Article; and agencies that are responsible for the review shall have the responsibility to consider these requests and recommendations before making their conclusions and decisions.
7	Responsibilities for establishing the review council of environmental impact assessment reports shall be defined as follows: a) The Ministry of Natural Resources and the Environment shall have the responsibility to establish the council or organize the selection of review service organizations to review environmental assessment reports of the projects that are subject to the approval of the National Assembly, the Government and the Prime Minister; and other inter-sector and inter-provincial projects ; b) Ministries, ministerial level agencies and Government bodies shall have the responsibility to establish the council or organize the selection of review service organizations to review environmental impact assessment reports of the projects within their competence of decisions and approvals, except inter-sector and inter-provincial projects; c) Provincial level People's Committees shall have the responsibility to establish the council or organize the selection of review service organizations to review environmental impact assessment reports of the projects that take place within their territories and subject to their competence of decision and approval and that of the People's Councils of the same level.

出典：LEP 2005

ｄ）EIA報告書の承認

EIA報告書の承認は表２－63のとおりLEP（29/2005/L/CTN）Section２, Article 22に従い実施される。

表２－63　EIA報告書の承認

1	The agencies that are responsible for establishing the review council of environmental impact assessment reports shall have the responsibility to approve the environmental impact assessment reports upon the review.
2	The agencies that are responsible for the approval of the environmental impact assessment reports shall have the responsibility to examine any of relevant complaints and recommendations submitted by project proponents and concerned residential communities, organizations and individuals before making the approval.
3	Within a maximum period of 15 working days from the date of receipt of environmental impact assessment reports revised to comply with requirements set forth in conclusions made by the review council and review service organizations, Heads of the agencies stipulated in Paragraph 1 of this Article, must consider and make decisions on the approval of environmental impact assessment reports; and if rejected, must reply, in writing, to project proponents in which reasons of the rejection are clearly stated.
4	Projects that fall under Article 18 of this Law, of which their investments, constructions and operations shall be only approved and licensed when their environmental impact assessment reports are approved.

出典：LEP 2005

（３）土地収用・住民移転の法的枠組み

１）土地収用

土地収用に関する法規として、土地法（Law on Land）があり、本法の目的は国防・治安保障、公共の利益のため国家が土地を収用できるとしているものである。なお、同法は1993年の全面改正と1998年の再改正、そして2003年12月に再々改定され国会の承認を得て2004年１月に（新）土地法として施行されている。

この土地法の改定に伴う、現在の土地収用に適応される関連法規を表２－64に整理する。

表２－64　土地収用関連法規

	法規範	番号	制定年月	概要
i	Constitution	-	1992年４月	ベトナム国憲法
ii	Law	No.13/2003/QH11	2003年12月	（新）土地法（Law on Land）
iii	Decree	No.197/2004/ND-CP	2004年12月	政府の土地収用時の補償、支援及び再定住に関するDecree
iv	Decree	No. 188/2004/ND-CP	2004年11月	多種多様な土地の価格決定の方法に関するDecree
v	Circular	No.52/1999/ND-CP	1999年２月	家屋の分類に関するCircular
vi	Decree	No.64/CP	1996年９月	農地の長期宅地転用に関するDecree
vii	Decree	No.45/CP	1996年８月	Decree No.60/CPで不適格者への土地利用権を許可するDecree
viii	Decree	No.60/CP	1994年７月	不動産所有権及び都市部住宅地利用権に関するDecree
ix	Decree	No.181/2004/ND-CP	2004年10月	土地法の施行に関するDecree

出典：Resettlement Planning Document、Resettlement Framework, Viet Nam: Integrated Rural Development Project in Central Provinces, April 2007, Ministry of Agriculture and Rural Development （MARD）

この新土地法の改定に伴い、特に Decree No.197（補償、支援及び再定住）の内容が大幅に変更された。主な変更点は以下のとおりである。

・補償の適格者の拡大
・移住のための移転や引越費用の増額
・転業する移転民の生計の安定、農産物からの所得確保支援
・郡（ディストリクト）レベルでの補償、支援及び移転委員会（Compensation, Assistance and Resettlement Boards：CARBs）の設立

２）住民移転

住民移転に係る関連法規を整理すると表２－65となる。なお、土地収用法に関する法規と重複しているがこれは土地収用と住民移転は互いに関連していることによる。

表２－65　住民移転関連法規

	法規範	番号	制定年月	概要
i	Law	No.13/2003/QH11	2003年12月	（新）土地法
ii	Decree	No.197/2004/ND-CP	2004年12月	政府の土地収用時の補償、支援及び再定住に関するDecree
iii	Decree	No. 17/2006/ND-CP	2006年	政府の土地回収時の保証、復興及び再定住に関するDecree
iv	Decree	No. 188/2004/ND-CP	2004年11月	多種多様な土地の価格決定の方法に関するDecree

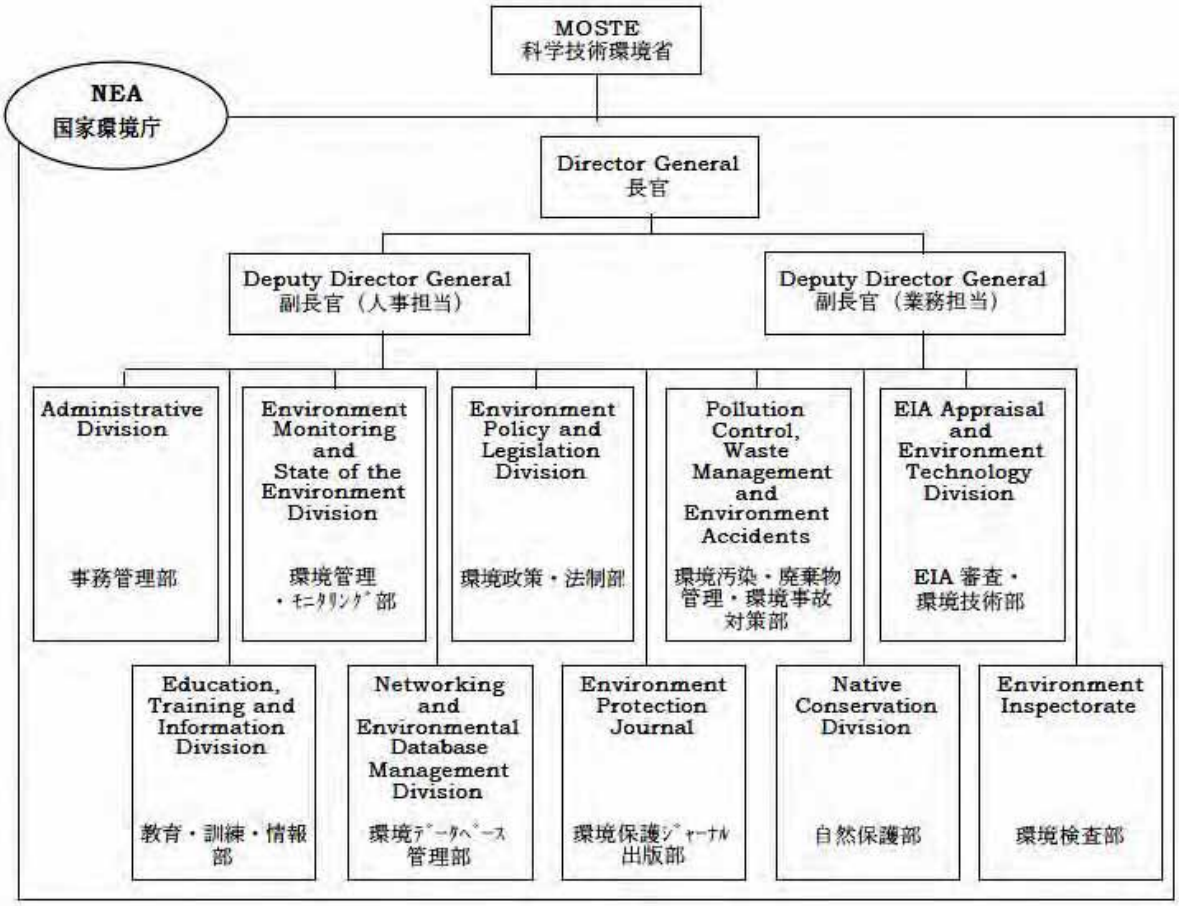
出典：Resettlement Planning Document、Resettlement Plan, Viet Nam: Integrated Rural Development Project in Central Provinces, April 2007, Ministry of Agriculture and Rural Development （MARD）

（４）環境行政実施体制

1992年、それまで同国の環境保全全般を担当していた国家科学技術委員会（State Committee for Science and Technology：SCST）が発展的に改組され国家レベルでの環境行政機関として「科学技術環境省（Ministry of Science, Technology and Environment：MOSTE)」が設立された。また、MOSTEの一部門として環境行政の実務を実施する「国家環境庁（National Environment Agency：NEA)」が1993年に設置され、環境関連政策や法令の起案、地方環境行政の指導や監督、EIAの審査等、環境行政実務の全般を実施していた。

一方、地方レベルの環境行政組織としては、中央直轄４都市（ハノイ、ホーチミン、ハイフォン、ダナン）及び全57省（Province）における各省人民委員会（Provincial Peoples Committee：PPC）の下部組織である「省（Province）科学技術環境局（Department of Science, Technology and Environment：DOSTE)」が設置された。

すなわち、国家レベルではNEA、地方レベルでは各省のDOSTEが実質的な環境行政の実施部隊となって機能していた。参考までに、図２－22にNEAの組織図を示す。



出典：日系企業の海外活動にあたっての環境対策（ベトナム編)、2002 年、（財）地球・人間環境フォーラム

図２－22　旧 NEA 組織図（参考）

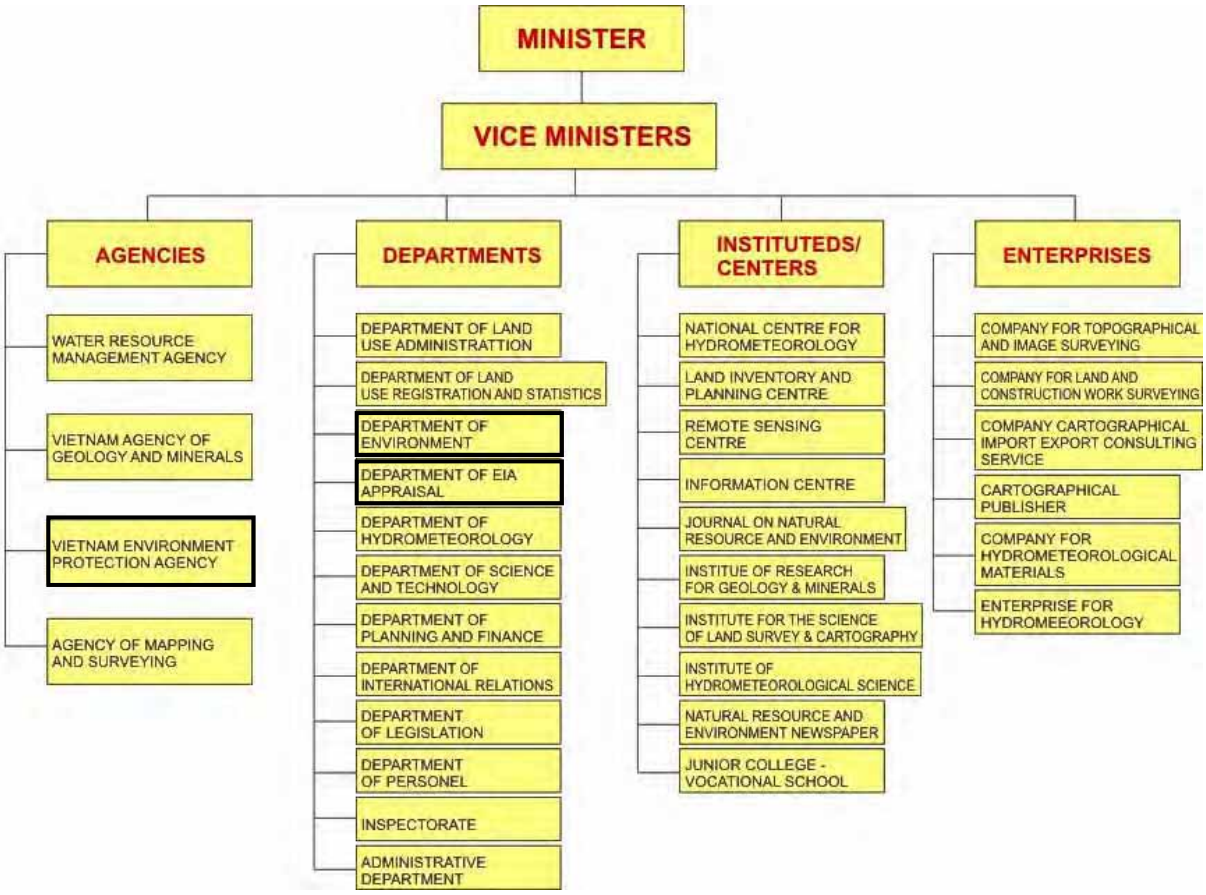
以上のとおりMOSTE及び各省（Province）のDOSTEがベトナムの環境行政実施体制の基礎を形づくり、その後の行政改革でMOSTE及びDOSTEの環境部門が独立し、現在のMONRE及び省DONREとなった。以下に、現在の環境行政の実施体制を整理する。

１）天然資源環境省（Ministry of Natural Resources and Environment：MONRE）

2002年８月５日の第９回国会の国民議会により、MONREを含む政府の各省庁及び機関のリストを規定した決議案（Resolution No.02/2002/QH11）が採択された。以下の組織の統合組織としてMONREが設立された。

・国土行政総局（Former General Department of Land Administration）
・水力気象総局（Former General Department of Hydro and Meteorology）
・MOSTEの国家環境庁（National Environment Agency）
・ベトナム地質鉱物局（Vietnam Department of Geology and Minerals）及び地質鉱物研究所（Institute of Geology and Minerals）
・農業地方開発省（Ministry of Agriculture and Rural Development）の水資源管理部（Section of water resources management）

2001年11月に、MONREの機能、役割、権限及び組織を規定した政府政令（The Governmental Decree）No.91/2002/ND-CPが公布された。翌2002年12月、MONRE主導により付属機関の機能、役割、権限及び組織の規定と、MONREがこれら付属機関の主導権を持つ複数の省令を発布した。この中で実際の環境行政の実務を実施しているのは、図中太線で囲んだ、環境保護庁（VEPA）、環境局（DOE）及びEIA・審査局（EIA & Appraisal）である。図２－23にMONREの組織図を示す。



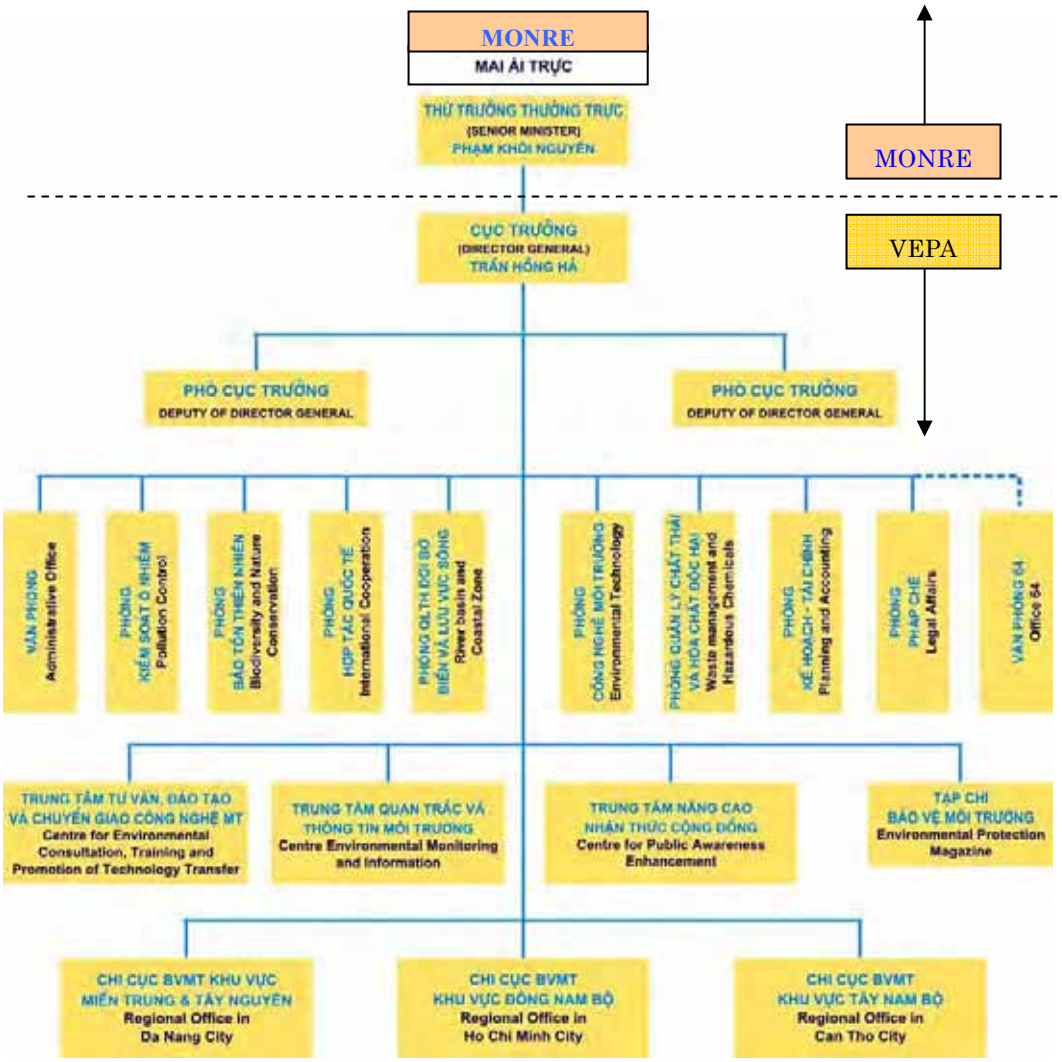
出典：ベトナム環境保護庁（VEPA）
HP http://www.nea.gov.vn/english/organization/MONRE/sodo_bo_eng.jpg

図２－23　MONRE の組織図

a ）環境保護庁（Vietnam Environment Protection Agency：VEPA）

VEPAは、2005年12月にMONREの省決定（Decision No.14/2005/QD-BTNMT）により設立された。VEPAの任務は、以下に示す環境汚染、環境質の悪化及び環境事故の低減策の審査、監督、予防的措置や回復処置等の環境保護に関する国家の行政業務の実施においてMONREを補佐することにある。図２－24にVEPAの組織図を示す。

a.1	環境保全に関する政策、法規文書、戦略、企画、計画及び国家事業の開発。
a.2	環境保全に関する国家戦略の実施にかかる行動計画、生物多様性保全の国家計画の、環境保全に係る国家計画、国家事業、工程、手続き規則の検討と大臣への承認の取り付け、及びMONREによる事業実施の調整。
a.3	MONREにより指定されたてられた組織、個人、世帯、各レベルの人民委員会の法の執行の査察、環境保全に係る問題に関する組織及び個人からの要望及び質問への回答及び、MONREの査察官と共同した環境特別査察の実施。
a.4	国家環境モニタリング制度計画の検討と大臣への承認取り付け、環境調査や環境モニタリングの統合されたデータ管理の実施、MONREの国家環境モニタリングの実施と管理、国家環境状況の年次報告書及びその他固有の環境報告書の作成。
a.5	天然資源及び背物多様性の調査、統計、アセスメント及び管理手法、保全及び持続的利用、及びMONREによる生物学的安全性の管理。
a.6	河川流域、海岸海洋環境の保全の統合された管理とモデル化に関する戦略と行動計画実施の開発と指導。
a.7	MONREが承認したEIA実施事業のその後の検査と指導。
a.8	廃棄物発生源の調査、インベントリー及び管理の実施。廃棄物の収集、処理、処分及びリサイクルの技術的解決及びモデル化実施の提案と組織化。
a.9	環境事件・事故への防止及び対応策の調査及び実施の提案。
a.10	環境に配慮した企業及び製品の法規制に関するガイドラインの検討と大臣への承認の取り付け。
a.11	国内生産あるいや国外調達による廃棄物処理技術及び装置の評価の工程と手続きの検討と大臣への承認の取り付け。
a.12	国際経済統合潮流での環境保全の手段と方法の評価、モニタリング及び監督の実施。
a.13	訓練、法律教育宣伝の組織化及び意識向上、環境保全の地域参加モデルの開発、環境保全の社会化の実施、及び環境保全において際立った成果を収めた組織及び個人の認定と報奨の制度化。
a.14	環境に関する印刷物の編集と発行の制度化。
a.15	環境管理モデルの研究開発の実施。即ち、クリーン技術モデル、環境に優しい技術、生態学的工業団地、エコ・ビレッジ、環境汚染及び環境悪化と事故の管理、防止と解決、そして環境改善における科学的及び技術的前進の研究と応用の実施。
a.16	国土利用計画、水資源国家戦略及び省間河川流域総合計画、鉱物資源の基本調査、探査、開発と加工における国家M/Pにおける環境要件を満たすための活動の実施。
a.17	MONRE指定の環境保全分野における国際条約、多国間及び二国間協力事業、国際開発事業の実施と調整の組織化。
a.18	環境関連法規、専門技法や技術に関し各産業部門、地方政府、企業及び個人に対する相談及び助言サービス、技術や専門分野の訓練や上級コース及び環境保全における技術移転の実施。
a.19	法的に認可されている環境費用の徴収と使用の管理。
a.20	環境保全に関する問題対処の国家及び分野・学際的運営委員会への支援の実施。
a.21	財政及び人的資源の効果的及び効率的管理と利用。法によるMONRE指定の主要な建設事業の管理。
a.22	環境保全事業の管理に関する規則の検討と大臣への承認の取付け、及びその実施。
a.23	ベトナム環境保護庁（VEPA）の組織、幹部、公務員や職員の管理。
a.24	担当業務の統計書、定期刊行物及び特別報告書の作成。
a.25	大臣の依頼によるその他の公務の実施。



出典：ベトナム環境保護庁(VEPA)
HP http://www.nea.gov.vn/english/Images/so%20do.jpg　(一部加筆)

図２－24　ベトナム環境保護庁（VEPA）組織図

b）環境局（Department of Environment：DOE）

MONREのDOEは、以下に整理したとおり、関連政策検討の視点から環境保護活動の国家行政の実施、及び関連法規、戦略、計画作成の検討においてMONREの大臣を補佐し実施する任務を与えられている。

b.1	環境保全の法的文書案、戦略案、開発計画及び企画案、環境基準案の作成とMONREの承認の取得。
b.2	関連法的文書及び環境基準遵守及び環境保全に関する戦略、計画の監督。
b.3	環境モニタリングデータの利用と管理及び大臣が公布するための規則案の作成。
b.4	国家環境基準遵守を求められている企業への認証書の交付及び取り消しに関する大臣への起案。
b.5	環境政策及び法規の影響に関する検討及び調査の実施。
b.6	環境保全分野におけるMONREの法規制の国民への説明責任の実施。
b.7	環境分野の公共事業を実施するための政策の起案や制度の開発と大臣への承認の取付け。
b.8	環境保全分野の協会やNGOとの接触、彼らの活動の把握と実施パフォーマンスに関する大臣への報告。
b.9	大臣承認による国際事業の実施。
b.10	局の責務の実施の実績に関する要約及び定期レポートの作成。
b.11	大臣の指示による他の責務の実施。
b.12	局内人事管理の実施。

ｃ）環境影響評価（EIA）・審査局（Department of EIA and Appraisal：DOEIA）

EIA・DOEIAは、以下に整理したとおり、SEA、EIA及び審査の環境行政の実施においてMONREの大臣を補佐する任務を与えられている。

c.1	EIAと評価に関する法律文書の起案と、大臣の承認の取り付け。
c.2	事業のEIA方策とレポートの評価に必要な全ての活動の調整。
c.3	評価されたEIAレポートに明記された環境保全活動の実施の監査。
c.4	ベトナム領土内流域や経済特区における所有者が明確でない特殊な開発事業のEIAレポートの評価の実施。
c.5	ベトナム国内で製造された、組み立てられた、あるいは輸入された環境技術、廃棄物処理装置のEIA評価の実施。
c.6	廃棄物を製品の素材に利用する場合、またベトナム国内あるいは海外から輸入された廃棄物を素材に作られた製品の使用のEIA評価の実施。
c.7	必要に応じEIAに関する問題に関し個人あるいは組織に対する説明責任の実施。
c.8	EIA及び評価分野におけるガイドラインの作成及び専門トレーニングの実施。
c.9	EIA及び評価分野における小才事業や科学的調査の実施。
c.10	局の責務の実施の実績に関する要約及び定期レポートの作成。
c.11	大臣の指示による他の責務の実施。
c.12	局内人事管理の実施。

なお、MONREは以下に示す国家評議会（National Council）の議長を司る中心的役割を担当するよう政府により指示されている。

・水資源評議会（for water resources）
・鉱物資源評議会（for the assessment of minerals volume）
・ベトナム戦争時米国が使用した枯葉剤（エージェント・オレンジ）の因果関係の検討評議会（for overcoming the consequences of orange agents used by the Americans during the war time in Vietnam）
・上水供給及び環境衛生評議会（for clean water supply and environmental sanitation）

２）天然資源環境局（Departments of Natural Resources and Environment：DONRE）

MONREと自治省（Ministry of Home Affairs）が協力して、各省（Province）の天然資源環境局の設立に関するDecision No.45/2003/QD-TTgを草案した。2003年４月、首相により本案は制定された。これにより各省と中央直轄５市（ハノイ、 ホーチミン、ハイフォン、ダナン、カントー）を含む計64か所にDONREを置き地方の環境行政を実施し

ている。

一方、省レベルでの天然資源管理及び環境問題に対処するために、2003年７月に、MONRE及びMOHAは共同で、PPCを支援のためのガイドラインであるCircular No.01/TTLT-BTNMT-BNVを発布した。

このように省レベルでは、PPCが地方環境行政に関し関与しており、特に各省レベルで実施される環境調査やEIAについてはDONREだけでなく、省人民委員会の関わりについて留意する必要がある。

３）環境関連活動実施政府組織

表２－66にMONRE以外の環境関連活動実施政府組織を示す。

表２－66　環境関連活動実施政府組織

政府組織		省庁局
農業地方開発省（MARD: Ministry of Agriculture and Rural Development）	-	Forest Protection Agency
	-	Product quality and industry
	-	Science Department
	-	Forest Development Department
	-	Flora protection Department
	-	Irrigational works and water management Agency
計画投資省（MPI: Ministry of Planning and Investment）	-	Environment and Education, Science Department
保健省（MOH: Ministry of Health）	-	Precautionary Health Department
交通省　（MOT: Ministry of Transportation）	-	Science and Technology Department
防衛省（MOA: Ministry of Army）	-	Environment and Science, Technology Agency
漁業省（MOFi: Ministry of Fisheries）	-	Department of science, technology and environment
	-	Fisheries beneficiary source protection Agency
産業省（MOI: Ministry of Industry）	-	Environment and Education, Science Department
	-	Vietnam Geological Agency
建設省（MOC: Ministry of Construction）	-	Department of Science and Technology
ペトロリメックス社（Petrolimex General Company）	-	Division of Science, Technology and environment
民間航空局（CAA: Civil Aviation Agency）		-

出典：“JOB REPORT” Ms. Nguyen Thi My Hoang, 2006, VEPA, MONRE

４）その他の環境関連調査実施機関等

ベトナムで環境関連調査を実施しているNGO、ローカルコンサルタント、政府実施組織等を整理する。

ａ）MOT推奨ローカルコンサルタント（政府機関含む）

MOTの環境課で推奨する、運輸交通セクターでEIAを得意としているローカルコンサルタントは以下のとおり５つの組織で、このうち以下の①TEDI（Transport Engineering Design Incorporation）を強く勧めていた。続いて②の運輸科学技術研究所ITSI（Institute of Transport Science and Technology）（元RIST）とした。

①Transport Engineering Design Incorporation（TEDI）

1962年12月に設立された運輸技術設計研究所（Transport Engineering Design Institute）が1995年11月のMOTのDecision No.4898/TCCB-UB 及び首相の承認により、現在の“Transport Engineering Design Incorporation（TEDI）”と公社化され現在に至っている。TEDIは運輸交通セクターの企画、調査、コンサルティングサービスや技術設計等13分野の事業を展開している。その１事業として運輸交通セクターに特化したEIA調査を実施しており、その事業概要は以下のとおりである。

・環境調査：大気質、騒音、振動、表流水、地下水、未発掘環境、生態学的探査、人類学的調査、森林地帯への大気汚染物質調査、水環境における有機物質

（DO、BOD）、濁度及び油分サンプリング調査。
・EIA調査：運輸交通セクター事業及び稼働中の関連施設のEIAの実施
・環境管理：運輸交通セクター事業の環境管理監督。

TEDI本部	所在地　278 Ton Duc Thang, Dong Da, Hanoi, Vietnam Tel（+84.4）8514431　Fax（+84.4）8514980　E-mail　TEDI@FPT.VN
TEDI-South	所在地　15A Hoang Hoa Tham, Binh Thanh, Ho Chi Minh City, Vietnam Tel（+84.4）8514431　Fax（+84.4）8514980　E-mail　tedibranch@fmail.vnn.vn

②Institute of Transport Science and Technology（ITST）

運輸科学技術研究所（ITST、MOT）の前身は1956年に設立されたResearch Institute for Transport Science and Technology（RITST、MOT）で、現在はベトナムの科学研究及び技術開発を実施している42の国立研究所の一つである。また、ITSTはローカルの専門家派遣や地方道路調査（Rural Road Surfacing Research）への支援等も実施している。

ITST本部	所在地　1252 Duong Lang -Dong Da District Hanoi, Vietnam Tel（+84.4）8347980/（+84.4）8340749　Fax（+84.4）7663977

③Environmental & Transportation Engineering Consulting Cooperation
④Training & Consulting Center in Science & Technology & Environmental Protection Center at Maritime University
⑤Environmental Protection Center at Association of Environmental Protection
（なお、③～⑤は参考までに記すが、ベトナム語から英語の通訳による聞き取り調査によるため正確な名称は不明であり、MOT側も特に推奨していなかった。）

b）VEPA、MONRE推奨ローカルコンサルタント

VEPAが推奨する、運輸交通セクターでEIAを得意としているローカルコンサルタントは以下の①EEI（Ecology and Environment Institute）である。また、表２－68に示したとおりVEPAは環境関連調査を実施している研究所、コンサルタント等のロングリストを作成している。なお、MONREは、本格調査時ローカルコンサルが必要な場合、同リストを参考にする、あるいは環境行政の実施機関であるVEPAの推奨するローカルコンサルタントが実質的に適当であるとした。

①Ecology and Environment Institute（EEI）（VEPA推奨）

EEI（Ecology and Environment Institute）は、2002年11月のベトナム自然環境保護協会会長Decision No.85/QD-HMTgにより設立され、2003年１月に、科学技術活動登録許可書（A-050：Registration license for scientific and technological activity No.A-050）の発行をMOSTから受けている。なお、EEIは公認された環境分野におけるNGOである。

EEIのスタッフは現在62人であるが、多くは博士号取得者や大学の教授、準教授等の個人コンサルタントがEEIに登録し、事業ごとにプロジェクトチームを編成する。これは、通常ベトナムでみられる他のローカルコンサルタントと同様な

組織形態である。EEIの主な活動は以下の５分野で、EIA関連調査は以下に示すうち、（iv）の事業の中に含まれる。なお、EEIの訪問調査から、RRA、PARやSWOT等の参加型による調査・組織制度分析手法も理解しており、EEIは社会配慮調査等も十分にできると思われる。

(i) 科学調査研究
(ii) 研修・教育
(iii) 科学、技術及び環境に関するコンサルティングサービス
(iv) 科学、技術及び環境調査事業
(v) 国際協力

なお、NGOといえども、環境分野の調査研究等における国内及び国際的な公的機関との協力体制は表２－67に整理しているとおり強く維持しているとのことである。

表２－67　EEIと協力関連のある国内外組織

国内組織	国外組織
- Ministry of Planning and Investment - Ministry of Finance （MOF） - Ministry of Science, Technology （MOST） - Ministry of Natural Resources and Environment （MONRE） - Environment Protection Agency （VEPA） - City/Provincial People's Committees and Committees of Party - Provincial Department of Science, Technology （DOST） - Provincial Department of Natural Resources and Environment （DONRE） - Various Universities and colleges such as: Vietnam National University （VNU）, University of Polytechnics, University of Law, etc. - Various scientific institutes and labs such as: Vietnam Science Institute （VSI）, Ecology and Biological Resources Institute （EBRI）, National Centre for Science and Technology （NCST）, etc. - Enterprises - Civil societies; public participation and social - political associations	- World Bank （WB） - United Nation Development Program （UNDP） - World Wildlife Fund （WWF） - World Conservation Union （IUCN） - United Nation Environment Program （UNEP） - Or International organizations and foreign agencies - Asia Development Bank （ADB） - Sida - CIDA - SNV - Oxfam - CARE - DFID - GEF - FAO - MRC - AUSTRADE - NORAD - JBIC - JICA - US-AEP; EPA - OECD

出典：EEI

②MONRE・VEPAによる環境関連コンサルタントロングリスト

表２－68のとおり、MONRE・VEPAは環境関連コンサルタントのロングリストを準備している。ロングリストはベトナム全土をカバーしているが、政府機関、大学、研究機関、コンサルタント、NGO等が混在しており、特にコンサルタント、NGO等は事業ごとにプロジェクトチームを編成する方式が多いと考えられる。

表２－68　環境調査実施組織（政府機関、コンサルタント、NGOs）（１／６）

母体	組織名（英語）	活動分野	連絡先
NGO	The fertilizer Association Central of Vietnam	Organize, supervise and promote the researches on the situation of fertilizer manufacture; supply and demand; import and export within Vietnam; Training, technology transferring and consulting on related fields for farmers; Being a partner of International Fertilizer Industry Association	Số 3 M14 Ngõ 1 Nguyễn Chí Thanh, Hà Nội TEL: 04-8312056, FAX: 04-7720198 tht1@fpt.vn
	The Center for Environment Research, Education and Development	Conducting researches on environmental science and development; Education and training; Consulting on environmental technology transfer; Information and communication on environmental issues; Consulting on environmental policies.	279/24 Giảng Võ Ba Đình Hà Nội TEL:04-8515213. FAX:04-8515213 cered@hn.vnn.vn www.cru.uea.ac.uk/tiempo/annex
NGO	Vietnam Plant Protection Association	Developing and conducting the projects aimed at studying to apply new and advanced technologies into plant protection, sustainable agriculture, environmental protection and natural resources development; Organizing national and international seminars, workshops on related issues; Conducting related researches to propose proper methods of plant protection products/facilities and natural resources development; Coordinating the network of the scientists to study or to give comments on programs and strategies for pant protection, sustainable agro-ecosystems and environmental protection; Collecting and trading of specimen samples of pest, insects; Compiling and circulating publications, materials, books, workshop proceeding on plant protection and environmental protection..	A5 K83 Yên Hoà Cầu Giấy Hà Nội TEL: 04-83447756 vnppa@fpt.vn
Da Nang PPC	Da Nang Environmental Protection Center	Conducting environmental monitoring and analysis; Consulting on EIA report preparation for projects; Designing and installing the environmental treatment systems, including emission, wastewater and solid waste treatment; Conducting CP（cleaner production）assessment and energy auditing for industrial facilities.	Số 51A Lý tự Trọng Đà Nẵng TEL:0511-892822, FAX: 0511-822864 hoangahoang@yahoo.com
NGO	Investment Consultation Center for Research and Development of Rural Areas（INCEDA）	Conducting surveys on environmental pollution in agriculture and rural areas; Technology of wastewater and solid wastes treatment, especially in agriculture and rural areas; Organizing short-term training courses on agricultural wastes treatment; Technology to treat wastewater into safe water for daily consumption.	Số nhà 97 Ngõ 192, Đường Lê Trọng Tấn, Hà Nội TEL:04-5630166 lddien@hn.vnn.vn
NGO	The Tropical Silviculture and Environment Research Centre（TROSERC）	Nature conservation, biodiversity conservation, forest ecosystem protection;; Environmental improvement and protection, social forestry development, afforestation, trading of forest products; Conducting researches in the fields of forestry, species selection; Scientific services on forestry techniques and protection; Consulting on scientific services on forestry techniques, agro-forestry systems, improvement of living standards for mountainous areas.	Số 21 làng Thủ Lệ, Ngọc Khánh Ba Đình Hà Nội 04-7661839 04-7661839 khanhxuan@fpt.vn
MOST	Information Center for Standards, Metrology and Quality	Providing information on national and international environmental standards.	Số 8 Đường Hoàng Quốc Việt, Nghĩa Đô, Hà Nội 04-7565453 04-8361556 dtvan@tcvn.gov.vn www.tcvn.gov.vn
MOI	Center of Industrial Environment（CIE）- National Research Institute of Mining and Metallurgy - Ministry of Industry	Setting up plans for research and development projects on the management of industrial pollution; Carrying out consultancy for industrial enterprises in environmental protection; Carrying out research works on technologies of waste treatment; Development of co-operation in the fields of environmental science and technology with both local and international organizations and individuals; Setting up measures of environmental protection in industrial activities; Manufacturing and installation of industrial waste treatment equipments; Informing, predicting and applying advanced environmental technologies in industry; Providing training in environmental protection within the industrial sector; enhancing technical knowledge and specialized skills in environmental industry.	Số 30B Đoàn Thị Điểm Hà Nội 04-8457515 04-7321521 04-8456983 04-7321521 environet@fpt.vn
MARD	The Center for Water Resources Development and Environment（CWE）- Institute of Water Resource Research - MARD	Water resources: conducting researches on water resource balance; measures to water resource protection, integrated management of water resources, basin management, institutional issues and policies related to water resource management; technology on water resource development and exploitation, developing participatory management of water resources; Environment: conducting researches on technical measures to minimize pollution, waste treatment and reuse; environmental planning and management for sustainable development; water pollution prevention and forecasting; institutional issues and policies in terms of environmental management; participatory management of environmental protection; technical measures on wastewater treatment, rural sanitation, wastes from professional villages; measures on biodiversity preservation in wetland areas.	Số 165/4 Phố Chùa Bộc Đống Đa Hà Nội 04-5634809 04-5634809 cwe99@hn.vnn.vn

出典：VEPA、MONRE

表２－68　環境調査実施組織（政府機関、コンサルタント、NGOs）（２／６）

母体	組織名（英語）	活動分野	連絡先
Petro Vietnam	Research and Development Center for Petroleum Safety and Environment（RDCPSE）	Surveying, assessing existing environment and setting up environmental database; Establishing environmental sensitivity map; Preparing environmental impact assessment reports for onshore/offshore petroleum exploration, appraisal and production activities; sea port, works of construction and installation for oil and gas pipelines, terminals; petroleum processing plant; refineries, petrochemical plant, and other industrial projects such as power-urea/chemical plants; Establishing oil spill response plan for petroleum operations, port facilities, and coastal provinces; Carrying out services concerning environmental management and protection: - Participating in supervision of implementing Law on Environmental Protection in petroleum activities and other industries; - Assessing impacts and treatment of oil pollution resulted from oil spill incidents; - Participating in the compilation of regulation, standard, and guideline concerning environmental protection; - Consulting environmental aspect and establishing environmental management plan for the projects; - Using oil spill, air emission, wastewater dispersion, mud and cutting discharged models to predict range and pollution levels of air, water and sediment.	G1, Lầu 7, KS. Thanh Đa P.27, Q. Bình Thạnh TP. Hồ Chí Minh 08-8996976 08-8996008 cpse.hcm@fmail.vnn.vn
Bộ KHCN	Vietnam Productivity Center	Consulting on management systems: quality management systems of ISO-9000 2000, environmental management system of ISO 14000, HACCP/GMP, safety and professional health system OHSAS18001, system of social responsibilities administration SA8000; training through intensive courses or on-job on methodology and practices of productivity enhancement, quality management, environmental management such as green productivity, ISO14000, production management or operation.	Số 8 Đường Hoàng Quốc Việt Cầu Giấy Hà Nội 04-7561501 04-7561502 vpc@fpt.vn http://www.vpc.org.vn
Da Nang PPC	Research Center for Energy and Environment（RCEE）	New energy and regeneration; Saving and efficient use of energy; Mechanism of clean development and climate change.	Số 466, Nguyễn Chí Thanh, Hà Nội 04-7733686 04-7734022 ngrcee@hn.vnn.vn
MOET	Centre for Environmental Engineering of Towns and Industrial Areas（CEETIA）	Environmental monitoring and analysis: operating a environmental lab and a mobile monitoring station financed by MOST to implement assigned projects; Scientific researching: implement ministerial and national projects, programs on environment; Training: providing training course for master, doctoral degrees, especially training courses on environmental management for environmental managers; Technology application and transfer in terms of water treatment, noise control, air pollution, drainage, hazardous waste management; Consulting on EIA for the projects of industrial development, transportation, urbanization, business and other works.	Số 55 Đường Giải Phóng Hai Bà Trưng Hà Nội 04-8691604 04-8693714
MOET	Faculty for Environmental Engineering	Post graduate training in the following areas: environmental engineering, drainage, engineering of building works;	Số 55, Đường Giải Phóng, Hai Bà Trưng, Hà Nội 04-8691830
Hanoi PPC	Center of Research - Technology Transfer and Environment	Organizing the activities of research on , application of advanced environmental technologies into state management within Hanoi; Providing information, consulting services and training on science, technology and environment for relevant stakeholders; Providing information on environmental technology serving to technology transfer; Organizing and operating the network of mobile and fixed environmental monitoring stations; collecting environmental information and data serving to environment assessment.	Đường Phạm Văn Đồng Từ Liêm Hà Nội 04-7551104 04-7551104 cortten@hn.vnn.vn
NGO	Center for Researching and Applying New technology and Environment（ENVIC）	Researching to apply new and advanced technologies in following fields: chemistry, analysis, fertilizer, electronics, power, and environment; Consulting to design and prepare the projects to transfer technology in above mentioned-fields; Scientific services on above mentioned fields; Environmental treatment and EIA; Preparing projects to transfer package technology for treating waste from fertilizer manufacture plants with the capacity of 300 tons per day.	3M14 Láng Trung Đống Đa Hà Nội 04-7720631 04-7720631
MOLISA	Environmental Science and Technology Centre	Researching on scientific basis for recommendations of R&D projects on pollution control and treatment of environment in working places and urban, industrial areas; Researching on scientific basis serving to environmental safety and sustainable development; Conducting researches to apply and transfer new and advanced environmental technologies; Scientific services and international co-operation in related fields.	Số 216 Nguyễn Trãi Thanh Xuân Hà Nội 04-5540335 04-5540864 04-5540334 estec@hn.vnn.vn
MOET	Institute for Environmental Science and Technology - Hanoi University of Technology	To study and to develop the field of environmental science and technology to serve industrial sustainable development of Vietnam; To develop highly qualified human resources in the field of environmental science and technology（B.Sc., M.Sc., Ph.D.,）; furthermore to offer the training courses on environmental technology and management; To provide high quality services in the field of environmental science and technology, including EIS, cleaner production assessment, consultancy, transfer and evaluation of environmental technology and policy, industrial environmental monitoring, application of environmental economy in the evaluation of technology and environmental management; To cooperate with national and international organizations and experts in the fields of environmental protection.	Tầng 3, nhà C10, Đại học BKHN, Số 1 Đại Cồ Việt Hà Nội 04-8681686 04-8681687 04-8693551 inest@hn.vnn.vn

出典：VEPA、MONRE

表２－68　環境調査実施組織（政府機関、コンサルタント、NGOs）（３／６）

母体	組織名（英語）	活動分野	連絡先
	Center for Marine Environment Survey, Research and Consultation (CMESRC)	Conducting surveys on marine environment and dynamics; Researching on marine environment and dynamics; Consulting on the issues related to water levels, flows, waves, mud flows, erosion, and EIAs; Training on GIS, dynamics and marine environment.	Viện Cơ học, số 264 Đội Cấn Hà Nội 04-8236195 04-8237903 pvninh@im01.ac.vn
MOC	Science technical Environment Construction Center	Conducting surveys, designing and services in the building of industrial zones, environmental sanitation systems; Conducting EIAs, social census on urban and industrial areas; Consulting on building up quality management systems under ISO9000; Training on civil engineering;	Số 37 Lê Đại Hành Hà Nội 04-9780197 04-9780197
MOC	Centre for Research and Planning on Urban and Rural Environment (CRURE)	Conducting researches, organizing activities to implement the projects, programs on environmental planning of urban and rural areas; Conducting surveys on air pollution, water pollution serving to environmental planning of urban and rural areas, landscapes, historical sanctuaries, etc.; Conducting EIAs for urban, rural and industrial areas and key national projects if requested; Provide information services on related issues and preparing standards, policies, regulations on environmental planning of urban and rural areas; Training on environmental planning of urban and rural areas; Receiving foreign aid for the projects on research and training of environmental planning of urban and rural areas.	Số 37 Lê Đại Hành Hà Nội 04-9742049 04-8215885 04-8215796
MOI	Marine Geology Union (MGU)	Conducting surveys on marine resources and geology; Conducting surveys on environmental geology, geological changes, assessment of vulnerability and its solutions; Research on natural conditions of physical and biological marine resources serving to socio-economic planning of special economy coastal zones, islands throughout the country.	Số 125 Đường Trụng Kính Cầu Giấy Hà Nội 04-7842323 04-7842548 04-7842325 ttdcbien@hn.vnn.vn
NGO	Centre for Research and Development of Ethno-medicinal Plants (CREDEP)	Conducting surveys, conserving and sustainable using of traditional herbs and remedies; Researching to inherit and to develop traditional remedies of ethnic minorities in order to produce new medicines; Consulting on the studies and the manufacture carried out by traditional medicine producers within the country; Training on the protection of, the conservation of and the sustainable use of traditional herbs and medicinal plants.	Số 9 Vũ Hữu Lợi Hai Bà Trưng Hà Nội 04-9423043 04-9423043 http://www.credep.org
MOI	Analytical and Experimental Centre for Geology	Analyzing, experimenting, and identifying geological, mineral and environmental samples; Implementing the analysis to cross-check the analysis result of geological, mineral and environmental samples given by other labs; Researching to apply new techniques and advanced technologies into geology and environment protection.	Đường Hà Nội Hà Đông, Thanh Xuân Hà Nội 04-8542266 04-8540419
MOET	Research Centre for Environmental Technology and Sustainable Development (CETASD)	Analyzing and monitoring the organic pollutants and pesticide residues in ambient water and air; Analyzing of NOx, Sox, NH4, PAHs etc. in the air; Researching on the disposal of nitrogenous components, heavy metals from domestic water and wastewater; Researching on the treatment of water leaching from landfills; Services to analyze the samples of water, soil and foods.	T3, 334 Nguyễn Trãi Thanh Xuân Hà Nội 04-8587964 04-8588152 cetasd@fpt.vn
MOD	Centre of Environmental Technology (ECO)	Environmental engineering consultation, Environmental impact assessment, Environmental technological assessment, Environmental technological transfer, Treatment process and equipment design, Complete treatment equipment deliveries and installation, Plant start-up, Commissioning and Training, Upgrading and modernizing of existing treatment plants.	Số 18 Cộng Hoà, P.12 Q. Tân Bình TP. Hồ Chí Minh 08-8425760 08-8425763 eco@fmail.vnn.vn
MOI	Center of Safety - Environmental Protection	Implementing the duties to ensure the safety and the environmental protection of offshore oil extraction or production; Organizing training courses on environmental laws & regulations, pollution prevention, environmental monitoring and oil spillage response for the staff of the Centre.	Số 105 Lê Lợi, TP. Vũng Tàu, Bà Rịa - Vũng tàu 064-839871 064-839857
	Development Research and Consultancy Centre (DRCC)	Researching on the methodology of the development; Consulting on the issues of the development; Co-coordinating and implementing the projects of sustainable development of socio-economics, culture and human civilization; Provide information on the development projects for managerial institutions.	36 Hàng Chuối Hà Nội 04-8219582 04-9717549 drcc@fpt.vn
MOET	Faculty of Environmental Technology	Training for the degree of environmental bachelors and engineers; Conducting environmental researches and studies; Applying the new environmental techniques and technologies; Consulting one environmental engineering.	Linh Trung, Thủ Đức TP. Hồ Chí Minh 08-7220291 08-8960713 anbx@hcm.vnn.vn

出典：VEPA、MONRE

表２－68　環境調査実施組織（政府機関、コンサルタント、NGOs）（４／６）

母体	組織名（英語）	活動分野	連絡先
MOET	Center for I.T. and GIS - DITAGIS	Researching on the application of IT and GIS technologies into geographical planning, natural resource and environmental protection; Pilot production of hardware and software; Scientific services on information, consulting, training and technology transfer in the above mentioned areas.	Số 268 Lý Thường Kiệt, Q.10, TP. Hồ Chí Minh 08-8642768 08-8635719 gis.vietnam@hcmut.edu.vn
NGO	Vietnam Mining Scientific and Technological Association	Conducting scientific researches; Propagating the knowledge on mining techniques; Gathering the scientist to serve the common course of development.	Số 54, Hai Bà Trưng, Q. Hoàn Kiếm, Hà Nội 04-9342723 04-9342723 vinamin@hn.vnn.vn
	Forestry Scientific Technical Application Centre	Researching on the application of new knowledge and advanced technologies into forestry; Providing information, techniques and technologies transfer in the fields of forestry and plant production; Consulting on the designing and the implementation of forestry works, planting for urban landscapes; Implementing the scientific services to prevent pests and diseases and insects harmful to the building works.	Số 365 Phố Minh Khai Q. Hai Bà Trưng Hà Nội 04-8622419 04-6365072 ungdungkhktln@hn.vnn.vn
MOET	Faculty of Urban - Environment Economics and Management - National Economic University	Economical and environmental management; Economically planning of urban and rural areas.	Phòng 3.2, Nhà 10, Số 207, Giải Phóng, Hai Bà Trưng, Hà Nội 04-8697382 04-8698231 thechinh@fpt.vn
MOET	Centre for Environmental Economics and Regional Development - National Economic University	Economical and environmental management; Economically planning of urban and rural areas.	Phòng 3.2, Nhà 10, Số 207, Giải Phóng, Hai Bà Trưng, Hà Nội 04-8697382 04-8698231 thechinh@fpt.vn
MOET	CEFINEA - Institute for Environment and Resources（IER） - Vietnam National University of Hochiminh City	Scientific research and application of research technology to the field of environmental and resources protection; Training master and PhD degree in the fields of Environment Science and Engineering. Support to the University of Technology in undergraduate training in the field of environmental technology and management; Science advisory for the policy making, environmental protection programs; sustainable management of natural resources; technology transfer in the field of environment; As the environmental monitoring station of the 3rd region（Ho Chi Minh City and provinces of Mekong River Delta）belonging to national environmental monitoring system. CEFINEA has carried out many air and water quality monitoring programs.	Số 142 Tô Hiến Thành Q. 10 TP. Hồ Chí Minh 08-8651132 08-8655670
MONRE	The Institute of Meteorology, Hydrology, Oceanology and Environment	Researching on hydrometer logical and environmental conditions and applying the study results into socio-economic life; Consulting and giving comments for local and international projects, programs; Environmental impact assessment; Participating in the training activities of universities; Conducting the surveys, the investigations, the analysis in the fields of hydrology, meteorology and environment; Contracting the scientific services on the consulting, the measuring, and project preparing in the fields of the planning of and the management of environmental protection. Organizing training courses on the field of environment; Locally and internationally cooperating to prepare and to implement the projects in the fields of hydrology, meteorology and environment; Consulting on the implementation of projects on the development of dykes, ...	125N9 Lương Thế Vinh P.20, Q. Bình Thạnh TP. Hồ Chí Minh 08-8355276
MOET	Department of Environment - University of Natural Science - Vietnam National University of Hochiminh City	Training for university and postgraduate degrees in the field of environment; Preparing and implementing projects, programs, researches in the field of environment; Implementing the environmental surveys and investigations; Organizing training courses on the fields of environment; Internationally co-operating in the activities of environmental training and education;. Scientific services on environmental consulting, EIAs, environmental observations and monitoring, environmental treatment, environmental planning and management.	Số 227 Nguyễn Văn Cừ Q.5 TP. Hồ Chí Minh
NGO	Centre for Education and Communication of Environment（CEACE）	Researching on environmental science and technologies; Scientific services on environmental consultancy, education and communication; Developing, implementing the projects on environment protection and sustainable development.	Số 68, Nguyễn Du, Hai Bà Trưng, Hà Nội 04-8222333 ceace@fpt.vn
NGO	Centre for Natural Resources Survey and Technological Development（RSTD）	Researching on the scientific knowledge and technologies to apply into geodetics, land surveys, remote sensing and natural resource inventories; Scientific services on information provision, training and technology transfer serving to the development of and the promotion of geotics and mapping areas; Pilot production in the fields of geotics, mapping and remote sensing.	Số 68 Nguyễn Du Hai Bà Trưng Hà Nội 04-9425963 04-8222333 ceace@fpt.vn

出典：VEPA、MONRE

表２－68　環境調査実施組織（政府機関、コンサルタント、NGOs）（５／６）

母体	組織名(英語)	活動分野	連絡先
Bộ QP	Center for Technology Environmental Treatment (CTET)	Researching, experimenting, implementing the application of new and advanced technologies into environmental monitoring and analysis, EIAs reports preparation, rehabilitation of areas affected by the orange agents during the war, response with the hazardous radiation pollution, disposal of hazardous wastes and ecology protection; Scientific services on environmental consultancy, technology transfer and training on the above mentioned fields.	Số 282 đường Lạc Long Quân P.Bưởi, Q. Tây Hồ, Hà Nội 069-556586 04-7532773 04-7532773
NGO	Vietnam Natural and Traditional Beauty Association	Propagating and educating for the publics on the governmental policies, strategies or directions in the filed of environmental protection, natural resource development; Encouraging the participants to actually take their part in the implementation of these policies.. Researching, consulting and providing services related to environment and creature preservation; Developing the projects in the fields of nature conservation and sustainable development; taking part in the organization of environmental fairs, providing environmental training and consulting, and technology transfer.	Số 33 Lê Thánh Tông Hà Nội 04-8253950 04-8259619 vinatra.Ce@hn.vnn.vn
Da Nang PPC	Danang Environment Technology Centre (DENTEC)	Implementing the projects on environmental and biological resource protection ; Conducting surveys and investigations to prepare EIAs for projects of production facilities and business; Researching on the application of new and advanced technologies into environmental protection.	Số 45, Trần Hưng Đạo, Hải Châu, Đà Nẵng 0511-823515 0511-824120, dentec@dng.vnn.vn
NGO	Vietnam Environment and Sustainable Development Institute	Implementing R&D projects serving to environmental protection and to the promotion of sustainable socio-economic development; Providing training, education services to propagate the environmental awareness among governmental managers, industrial facilities, business, researcher and scientists as well as the publics; Consulting on the policies, strategies, planning on the technical measures for the wise use of natural resources, environmental quality improvement and sustainable development; Conducting EIAs for socio-economic development projects, programs and planning Evaluating the state of environment to propose the proper measures of pollution prevention and treatment and environmental improvement in urban and rural areas; International and locally co-operating to implement the projects, programs on environmental protection and sustainable development.	Số 19 Nguyên Hồng Hà Nội 04-7760810 04-7760811 vesdi@fpt.vn
MOD	Vietnam Institute for Tropical Technology and Environmental Protection (VITTEP)	Monitoring and evaluating the quality of ambient air, soil and water; Conducting EIAs for projects, developing the projects on the field of tropicalisation and environmental protection; Researching to apply and to implement the technologies of the treatment of emission, wastewater and hazardous wastes; Evaluating the effectiveness of tropical climate made on the products quality and duration, to produce new materials or equipment adaptable to the tropical weather; Consulting, providing the appraisal for the projects in the fields of tropicalisation and environmental protection; Training for the doctoral, master and university degrees in the fields of tropicalisation and environmental protection; Technology transfer, international and local cooperation in the field of science and technology.	Số 57A Trương Quốc Dung P.10, Q. Phú Nhuận TP. Hồ Chí Minh 08-8446262 08-8446265 08-8423670 bttepc@hcmc.netnam.vnn.vn
	Centre for Resources and Soil Environment	Conducting the researches to propose the strategies on land use and soil protection; Conducting surveys, inventories on land use and soil quality and environment; Implementing pilot models of land administration; Implementing and consulting the projects of land surveys	Phương Mai Đống Đa Hà Nội 04-8696078 04-8691687
	Center for Research and Co-operation for Mountainous Area Development (CERACOMD)	Researching on the issues of ethnics, traditional culture and customs, ecological environment, mountainous economics; Cooperating to implement the projects, programs on the fields related to mountainous development, especially the projects for remote area development; Consulting, training and providing scientific services on related fields.	Phòng 221, Số 27, Trần Xuân Soạn, Hà Nội 04-9715151 04-9715151 md-center@fpt.vn
MOET	Ho Chi Minh city University of Education	Compiling the training materials in the field of environmental demography; Providing training courses for high schools teachers on environment; Conducting researches to evaluate the environment quality at the schools and public places.	Số 280 An Dương Vương Q.5 TP. Hồ Chí Minh 08-8352020 08-8398946, hoangnhnh@yahoo.com
	Transport Environmental Engineering Center	Providing information and training services on environmental protection applied in the transportation; Evaluating and treating the environmental pollution/impacts from transportation; Implementing the projects, surveys, investigations aimed at environmental protection and safe transportation; Conducting scientific services in the field of environment and transportation.	Nhà T1, Trường ĐHGTVT Láng Thượng Đống Đa Hà Nội 04-7660382 04-7660382

出典：VEPA、MONRE

表２－68　環境調査実施組織（政府機関、コンサルタント、NGOs）（６／６）

母体	組織名(英語)	活動分野	連絡先
	Centre for Rural Communities Research and Development (CCRD)	FUNCTIONS AND TASKS Researching and evaluating human and natural resources in rural communities for socio-economic development and environmental protection programs; Researching and introducing new techniques and technologies in order to develop agriculture, forestry and fishery through the promotion of sustainable cultivation systems; Establishing household and community economic models suitable for economic and ecological regions in combination with testing the production of crops and animals in which high technologies are applied; Providing information, consulting, training and improving community management capacity, scientific knowledge and technology in agricultural, forestry, and fishery industries for rural community development. ACTIVITIES Research in human and natural resources, traditional cultivation, traditional culture and development demand of community; Research on the introduction of suitable scientific techniques and advanced technology for expansion; Research on economic mechanism for sustainable agriculture; Research for increasing household income and living standards; Conducting surveys, researching, and evaluating the socio-economic development situations in order to put forward solutions for improving community management capacity and the environment; Take part in the assessment of socio-economic implications of development projects in Vietnam; Advising on the issues relating to the proper management of natural resources, the economy, culture, society and environment for the implementation of projects on the preservation of community and sustainability of community; Developing the solutions for increasing household income and living standards; Developing the solutions for improving and enhancing community capacities; Developing the solutions for improving community environment; Building economic development models suitable for specific regions; Training community management cadres; Vocational training for farmers.	Số 15 Phố Thành Công Ba Đình Hà Nội 04-8350489 04-8311768 tvc.vacvina@netnam.org.vn CCRD maintains a small office in Hanoi but networks widely. The key staff consists of professional researchers, professors, practitioners, experts formally trained in developed countries and well qualified in economics, sociology, agriculture, geography, ethnology, oceanography, and environmental economics. CCRD consultants are available to assist you to put together the project or package you require. These consultants have worked for several domestic and international NGOs and for UNICEF in varying capacities. They have a proven capacity for eradicating and alleviating rural hunger; repairing damaged environments and assisting farmers to generate income.
	The Chemical Society of Vietnam	Gathering the scientists and manufacturers to promote and to develop the chemistry industry: Implementing R&D projects Environmental protection Training on subjects related to chemistry Providing the information and scientific services on related fields.	Số 2 Phạm Ngũ Lão Hà Nội 04-9332620 04-8267498 csv@netnam.vn
	Research Centre for Forest Ecology and Environment (RCFEE)	FUNCTIONS AND TASKS Scientific and technological research in the fields of forest ecology and environment for sustainable forestry resources management, development and utilization; Technology transfer for practical production and projects in relation to mentioned fields; Education, training and consultancy services on scientific, technical, environmental issues for related works and projects of the above-mentioned fields; FIELDS OF SPECIALISATION Physio-autoecology and forest plant population as a base for Silviculture techniques in forest establishment and rehabilitation; Biodiversity study natural resources conservation & management in forestry; Research on management and sustainable use of forest land resources; Research on environmental impacts of projects works concerning forest eco-system, resources, and environment; Research on technological development of biological tools and bio-fertilizers for nursery production, afforestation, sustainable forest resources development and management.	Chèm Đông Ngạc Từ Liêm Hà Nội 04-8389434 04-8389434 ttsinhthai@hn.vnn.vn
	Centre for Consultancy, Training and Technology Transfer (CTC) - National Steering Committee for Safe Water Supply and Environmental Sanitation (WATSAN)	FUNCTION AND TASKS Systematize, select and apply scientific, technical and technological achievements both at home and abroad on water supply and drainage, and environmental sanitation, and put forth experimental models of high technology. Provide technical and technological consultancy, assist the localities ti build projects for concentrated water supply and treatment of wastewater and environmental sanitation; Cooperate with organizations both at home and abroad to work out various forms of training to raise the technical and technological level of safe water supply and environmental sanitation; Collaborate with scientific establishments to organize technological transfer and test production of new scientific and technological products for water supply and drainage, and environmental sanitation for selection and populization throughout the country; International cooperative in the scientific experiences exchange; Training for specialized knowledge enhancement in the field of research and technology transfer; Attending in the training of postgraduate and specialize.	Số 1001 Hoàng Quốc Việt Nghĩa Đô Hà Nội 04-7541241 04-7541241 ctc-watsan@hn.vnn.vn

出典：VEPA、MONRE

２－３－２　ベトナムの社会・自然環境概要

（５）社会環境

１）人口動態

表２－69にベトナムの人口概要を示す。また、ベトナム中央統計局（General Statistics Office of Vietnam）が出している最新のデータ（2005年）による省別人口及び人口密度を表２－70、年別人口動態を表２－71にそれぞれ示す。各表から、以下のことがわかる。

・人口の約11%が首都ハノイ市とホーチミン市に居住（ホーチミン市の人口は、ハノイ市の約２倍となっている)。

・国土面積のわずか約17%にあたる紅河及びメコン河の両デルタに人口の約43%が集中。

・近年、年間約1.3から1.4%の割合で人口が増加。

表２－69　人口概要

	2005年	2006年
全国（万人）	約8,32	約8,411
増加率（全国）	1.33%	n/a
ハノイ市（万人）	約315	n/a
ホーチミン市（万人）	約589	n/a

出典：日本国外務省HP、在ベトナム日本大使館HPより作表

表２－70　省別人口及び人口密度（2005年）

	人口(1,000人)	面積 (*) (Km^2)	人口密度(人 Km^2)		人口(1,000人)	面積 (*) (Km^2)	人口密度(人 Km^2)
全国	83119.9	329314.5	252		-		
Red River Delta	18039.5	14812.5	1218	South Central Coast	7049.8	33069.0	213
Hà Nội	3145.3	921.0	3415	Đà Nẵng	777.1	1255.5	619
Vĩnh Phúc	1169.0	1371.4	852	Quảng Nam	1463.3	10407.4	141
Bắc Ninh	998.4	807.6	1236	Quảng Ngãi	1269.1	5137.6	247
Hà Tây	2525.7	2192.1	1152	Bình Định	1556.7	6025.0	258
Hải Dương	1711.4	1648.4	1038	Phú Yên	861.1	5045.3	171
Hải Phòng	1792.7	1526.3	1175	Khánh Hòa	1122.5	5198.2	216
Hưng Yên	1134.1	923.1	1229	Central Highlands	4758.9	54473.7	87
Thái Bình	1860.6	1545.4	1204	Kon Tum	375.0	9614.5	39
Hà Nam	822.7	852.2	965	Gia Lai	1114.6	15494.9	72
Nam Định	1961.1	1641.3	1195	Đắk Lắk	1710.8	13085.0	131
Ninh Bình	918.5	1383.7	664	Đắk Nông	397.5	6514.5	61
North East	9358.3	63629.8	147	Lâm Đồng	1161.0	9764.8	119
Hà Giang	673.4	7884.3	85	South East	13460.2	34743.1	387
Cao Bằng	514.6	6690.7	77	Ninh Thuận	562.3	3360.1	167
Bắc Kạn	298.9	4857.2	62	Bình Thuận	1150.6	7828.4	147
Tuyên Quang	726.8	5868.0	124	Bình Phước	795.9	6857.3	116
Lào Cai	575.7	6357.0	91	Tây Ninh	1038.5	4029.6	258
Yên Bái	731.8	6882.9	106	Bình Dương	915.2	2695.5	340
Thái Nguyên	1109.0	3542.6	313	Đồng Nai	2193.4	5894.8	372
Lạng Sơn	739.3	8305.2	89	Bà Rịa - Vũng Tàu	913.1	1982.2	461
Quảng Ninh	1078.9	5899.6	183	Hồ Chí Minh city	5891.1	2095.2	2812
Bắc Giang	1581.5	3822.7	414	Mekong River Delta	17267.6	39738.7	435
Phú Thọ	1328.4	3519.6	377	Long An	1412.7	4491.2	315
North West	2565.7	37336.9	69	Tiền Giang	1700.9	2366.6	719
Điện Biên	449.9	9560.0	47	Bến Tre	1351.5	2321.6	582
Lai Châu	314.2	9059.4	35	Trà Vinh	1028.3	2215.1	464
Sơn La	988.5	14055.0	70	Vĩnh Long	1055.2	1475.2	715
Hòa Bình	813.0	4662.5	174	Đồng Tháp	1654.5	3246.1	510
North Central Coast	10620.0	51510.8	206	An Giang	2194.0	3406.2	644
Thanh Hóa	3677.0	11116.3	331	Kiên Giang	1655.0	6268.2	264
Nghệ An	3042.0	16487.4	185	Cần Thơ	1135.2	1390.0	817
Hà Tĩnh	1300.9	6055.6	215	Hậu Giang	790.8	1608.0	492
Quảng Bình	842.2	8051.8	105	Sóc Trăng	1272.2	3223.3	395
Quảng Trị	621.7	4745.7	131	Bạc Liêu	797.7	2525.7	316
Thừa Thiên - Huế	1136.2	5054.0	225	Cà Mau	1219.4	5201.5	234

(*) Data of 2003.

出典：General Statistics Office of Vietnam, 2007

表２－71　省別人口動態（1995-2005）

（1,000人）

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
全国	71995.5	73156.7	74306.9	75456.3	76596.7	77635.4	78685.8	79727.4	80902.4	82031.7	83119.9
Red River Delta	16136.7	16331.8	16520.4	16701.5	16870.6	17039.2	17243.3	17455.8	17648.7	17836.4	18039.5
Hà Nội	2431.0	2492.9	2556.0	2621.5	2685.0	2739.2	2841.7	2931.4	3007.0	3082.9	3145.3
Vĩnh Phúc	1048.2	1061.9	1075.8	1085.7	1094.3	1105.9	1115.7	1127.5	1142.9	1154.8	1169.0
Bắc Ninh	916.0	925.3	931.7	937.6	943.0	948.8	957.7	971.3	976.7	987.5	998.4
Hà Tây	2299.0	2328.0	2353.0	2373.6	2391.7	2414.1	2432.0	2452.5	2479.4	2500.2	2525.7
Hải Dương	1609.1	1619.5	1630.5	1641.3	1651.0	1663.1	1670.8	1684.2	1689.2	1698.3	1711.4
Hải Phòng	1608.2	1625.0	1641.9	1659.5	1676.7	1694.4	1711.1	1726.9	1754.1	1770.8	1792.7
Hưng Yên	1033.2	1042.6	1052.2	1061.7	1071.4	1080.5	1091.0	1101.4	1112.4	1120.3	1134.1
Thái Bình	1752.3	1761.0	1769.5	1778.5	1788.1	1803.8	1814.7	1828.8	1831.1	1843.2	1860.6
Hà Nam	763.7	771.6	779.4	786.6	792.5	795.5	800.4	805.8	814.9	819.6	822.7
Nam Định	1820.5	1838.0	1856.2	1874.4	1891.9	1904.1	1916.4	1931.7	1935.0	1947.2	1961.1
Ninh Bình	855.5	866.0	874.2	881.1	885.0	889.8	891.8	894.3	906.0	911.6	918.5
North East	8398.9	8524.8	8635.8	8737.1	8852.7	8942.8	9036.7	9136.8	9220.1	9244.0	9358.3
Hà Giang	550.3	564.2	577.7	590.4	605.9	616.6	625.7	637.7	648.1	661.9	673.4
Cao Bằng	489.2	489.4	490.0	490.5	492.1	496.5	501.8	505.7	503.0	508.2	514.6
Bắc Kạn	254.2	259.6	265.2	270.9	276.4	280.1	283.0	286.3	291.7	295.1	298.9
Tuyên Quang	638.8	648.9	659.0	668.0	677.3	684.0	692.5	702.9	709.4	718.1	726.8
Lào Cai	550.1	562.8	574.5	585.9	598.5	607.2	616.5	628.7	639.3	565.7	575.7
Yên Bái	647.7	655.9	664.5	673.1	682.1	690.7	699.9	707.3	713.0	722.7	731.8
Thái Nguyên	1005.0	1020.6	1029.6	1038.5	1047.8	1054.4	1061.7	1072.8	1085.9	1095.4	1109.0
Lạng Sơn	679.2	689.2	694.7	700.2	705.9	712.3	715.3	719.3	724.3	731.4	739.3
Quảng Ninh	941.7	958.0	974.4	991.4	1007.2	1016.0	1029.9	1039.8	1055.6	1067.4	1078.9
Bắc Giang	1431.0	1451.4	1468.3	1477.4	1495.7	1510.4	1522.0	1534.9	1547.1	1563.5	1581.5
Phú Thọ	1211.7	1224.8	1237.9	1250.8	1263.8	1274.6	1288.4	1301.4	1302.7	1314.5	1328.4
North West	2065.7	2112.9	2159.4	2205.5	2239.8	2278.0	2312.6	2350.4	2390.2	2524.0	2565.7
Điện Biên	}									440.9	449.9
Lai Châu	} 535.5	549.5	562.8	576.7	593.6	604.3	616.3	629.1	642.5	308.0	314.2
Sơn La	811.7	833.4	855.0	877.0	886.5	905.9	922.2	938.7	955.4	972.6	988.5
Hoà Bình	718.5	730.0	741.6	751.8	759.7	767.8	774.1	782.6	792.3	802.5	813.0
North Central Coast	9580.6	9696.1	9813.1	9927.2	10030.6	10101.8	10188.4	10299.1	10410.0	10504.0	10620.0
Thanh Hoá	3337.7	3375.9	3414.1	3448.5	3474.5	3494.0	3509.6	3534.1	3620.3	3646.6	3677.0
Nghệ An	2714.9	2752.8	2791.3	2829.4	2865.2	2887.1	2913.8	2951.5	2977.3	3003.2	3042.0
Hà Tĩnh	1247.7	1253.2	1258.6	1264.4	1271.1	1275.0	1284.9	1299.6	1283.9	1286.7	1300.9
Quảng Bình	746.1	758.2	771.0	783.9	795.8	801.6	812.6	825.5	818.3	831.6	842.2
Quảng Trị	534.9	544.8	555.0	565.4	574.9	580.6	588.6	596.8	608.5	616.1	621.7
Thừa Thiên - Huế	999.3	1011.2	1023.1	1035.6	1049.1	1063.5	1078.9	1091.6	1101.7	1119.8	1136.2
South Central Coast	6202.4	6287.3	6372.7	6460.5	6545.6	6625.4	6693.7	6785.9	6899.8	6981.2	7049.8
Đà Nẵng	637.3	649.3	661.8	674.4	687.3	703.5	715.0	724.0	747.1	764.6	777.1
Quảng Nam	1322.0	1335.3	1348.1	1361.8	1375.8	1389.4	1402.7	1420.9	1438.8	1451.9	1463.3
Quảng Ngãi	1149.0	1159.7	1170.4	1181.4	1191.9	1200.1	1206.4	1223.6	1250.3	1259.4	1269.1
Bình Định	1394.4	1412.7	1431.3	1449.6	1465.2	1481.0	1492.3	1513.1	1530.3	1545.2	1556.7
Phú Yên	740.3	752.3	764.4	777.1	790.5	800.7	811.0	823.5	836.7	849.0	861.1
Khánh Hoà	959.4	978.0	996.7	1016.2	1034.9	1050.7	1066.3	1080.8	1096.6	1111.1	1122.5
Central Highlands	3384.8	3563.0	3743.1	3922.2	4096.1	4236.7	4330.0	4407.2	4570.5	4673.9	4758.9
Kon Tum	279.5	288.3	297.3	306.7	316.6	324.8	330.7	339.5	357.4	366.1	375.0
Gia Lai	} 850.7	881.5	912.8	946.1	981.5	1017.0	1048.0	1064.6	1075.2	1095.5	1114.6
Đắk Lắk	1398.3	1501.8	1605.1	1703.1	1793.4	1860.9	1901.4	1938.8	1656.7	1687.7	1710.8
Đắk Nông									361.1	385.8	397.5
Lâm Đồng	856.3	891.4	927.9	966.3	1004.6	1034.0	1049.9	1064.3	1120.1	1138.7	1161.0
South East	10694.5	10947.3	11203.6	11478.8	11777.1	12066.8	12361.7	12578.5	12881.5	13192.1	13460.2
Ninh Thuận	466.5	476.6	487.1	497.7	507.4	514.8	531.7	542.6	546.1	554.5	562.3
Bình Thuận	951.7	976.2	1001.1	1027.0	1050.9	1065.9	1079.7	1096.7	1120.2	1135.8	1150.6
Bình Phước	533.2	551.4	572.6	608.1	652.3	684.6	708.1	719.4	764.6	784.7	795.9
Tây Ninh	910.0	924.1	938.8	953.7	968.0	976.3	989.8	1001.6	1017.1	1029.8	1038.5
Bình Dương	639.0	658.5	679.0	700.1	720.8	737.7	768.1	787.6	851.1	886.2	915.2
Đồng Nai	1844.8	1882.2	1920.0	1959.3	1999.5	2039.4	2067.2	2095.5	2142.7	2172.1	2193.4
Bà Rịa-Vũng Tàu	708.9	730.4	752.7	775.6	805.1	822.0	839.0	856.1	884.9	898.2	913.1
Hồ Chí Minh city	4640.4	4747.9	4852.3	4957.3	5073.1	5226.1	5378.1	5479.0	5554.8	5730.8	5891.1
Mekong River Delta	15531.9	15693.5	15858.8	16023.5	16184.2	16344.7	16519.4	16713.7	16881.6	17076.1	17267.6
Long An	1250.8	1265.1	1279.9	1294.8	1311.1	1330.3	1348.0	1363.6	1392.3	1400.5	1412.7
Tiền Giang	1581.5	1587.4	1593.6	1600.0	1608.4	1623.0	1635.7	1649.3	1660.2	1681.6	1700.9
Bến Tre	1281.8	1286.8	1291.4	1294.7	1299.1	1305.4	1308.2	1319.0	1337.8	1344.7	1351.5
Trà Vinh	934.9	942.6	950.8	959.2	969.1	978.3	989.0	1002.3	1002.6	1015.5	1028.3
Vĩnh Long	990.4	995.6	1001.0	1006.4	1012.3	1017.7	1023.4	1033.4	1036.1	1044.9	1055.2
Đồng Tháp	} 1489.3	1510.4	1532.5	1556.5	1568.2	1578.2	1592.6	1607.8	1626.1	1639.4	1654.5
An Giang	} 1970.1	1990.7	2011.1	2032.5	2055.4	2077.0	2099.4	2128.8	2146.8	2170.1	2194.0
Kiên Giang	1392.0	1422.3	1452.9	1480.3	1504.2	1524.0	1542.8	1565.9	1606.6	1630.4	1655.0
Cần Thơ	1739.7	1758.8	1778.0	1796.4	1816.8	1836.2	1852.1	1868.0	1114.3	1123.5	1135.2
Hậu Giang									767.4	781.0	790.8
Sóc Trăng	1150.1	1155.9	1162.3	1168.8	1177.9	1191.0	1213.4	1231.2	1234.3	1257.4	1272.2
Bạc Liêu	709.5	716.3	724.2	732.1	738.2	744.3	756.8	768.3	775.9	786.5	797.7
Cà Mau	1041.8	1061.6	1081.1	1101.8	1123.5	1139.3	1158.0	1176.1	1181.2	1200.6	1219.4

出典：General Statistics Office of Vietnam, 2007

２）宗教

仏教徒が80%を占め、この他はカトリック、新興宗教としてカオダイ教等がある。

３）民族

ベトナム国内の民族はキン族（越人：ベトナム人を意味する場合が多い）が人口の約90%近くを占め、他の民族は表２－72に示すとおりタイ族、ハモン族、ムオン族、クメール族などで、数百人単位で生活する少数民族も存在し、計53の少数民族が居住し、2002年現在人口全体の約16%を占める。

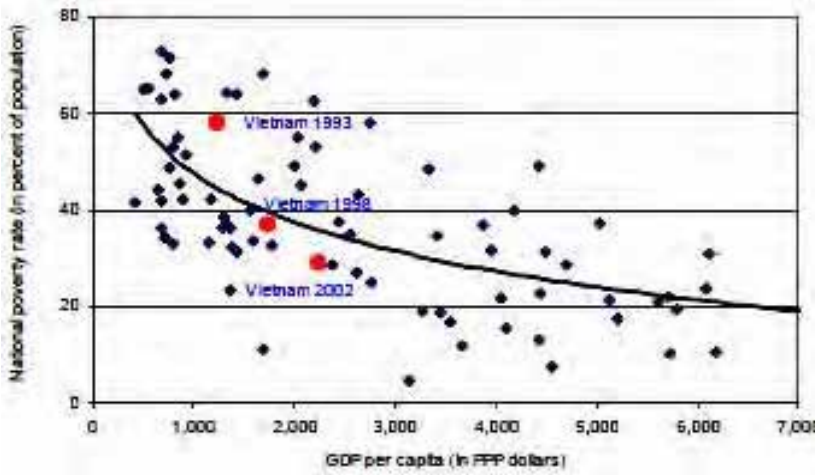
表２－72　ベトナムの主要な民族

民族名	概　要
キン族（Kinh）	キン（京）族とは、都に住み中国から独立した文明都市に住む民族という意味から発する。その後，北部のソンホンデルタを中心に稲作を行い周辺の民族を取り込みながら現在のベトナムを形成する多数民族となる。時にベト（越）族とも呼ばれ狭い意味でのベトナム人を意味することもある。
タイ族／ターイ族／ヌン族（Tày/Thái/Nùnh）	北部を中心に稲作を中心として生活する人々で少数民族の中では数的優位にある民族でそれぞれ100万人前後の人口を抱えている。ベトナムでは少数だがタイやラオスにおける多数民族と同じ系列であり語族的にも同じ民族と考えることが出来る。
ハモン族（Hmông）	ラオス，タイ，中国など広い範囲の山岳地に分布する民族で、ベトナムでは北部山岳地（サパなど）で焼き畑などをしながら生活している。中国で苗（ミャオ）族，ベトナムでは猫（メオ）族と呼ばれる。特徴的な刺繍（伝統技術）も有名。花モン族，黒モン族など細かい区分もある。
ムオン族（Mu'ò'ng）	歴史的にキン族と近い関係にあるムオン族は語族的にもキン族と同系列で考えられている。北部の山岳地帯（ハノイ近郊のHoa Binh省等）を中心に高床式の家屋で生活している。ムオンとは地域の集合体を表す言葉で首長は世襲制とされてきた。
クメール族（Khò'-me）	クメール族は，ベトナム南部メコンデルタ地域を中心にして生活している。元来は紀元１世紀頃から栄えたインドシナ南部を広く支配していたと考えられる扶南（ふなん）の主要民族であったとされ、メコンデルタ奥地ではオケオ遺跡という貴重な発掘も行われている。本来はクメール（カンボジア）語族。
ホア族　（Hoa）	中華系ベトナム人とも言える華僑の子孫にあたる人々（華人）で，大都市（ホーチミン，ハノイなど）を中心に広く分布している。ホーチミン市チョロン地区の中華街は有名でメコンデルタ地域にも料理店や商店を営む華人が少なからず見受けられる。

出典：メコンデルタ イン ベトナム、http://cantho.cool.ne.jp（現地聞き取り調査により調査団一部修正）

４）貧困

ベトナムの貧困については、近年の経済発展に従いその傾向が改善しつつあるといわれている。図２－25に示すとおり、GDPにおける貧困人口の割合は1993年、1998年そして2002年と減少傾向にあることがわかる。



出典：Poverty Vietnam Development Report 2004 Consultative Group Meeting for

図２－25　GDP における貧困人口の割合

また、JBICが2001年２月に編集・公開した「貧困プロファイル　ベトナム社会主義共和国」によると、ベトナムにおいて「少数民族と貧困の関係は深い」として、その関係を表２－73及び表２－74に示している。JBICはこの表の分析結果を以下のとおりとしている。

・中国系の貧困率が最も低い。
・ベトナム人の85%を占めるキン族が、中国系に続いて低い貧困率。
・キン族については特に、1992/93～1997/98年に約15%も貧困率が減少。
・中国系以外の少数民族については、非常に高い貧困率。
・特に、北部山岳・丘陵地域に住むモン族、ダオ族は高い貧困率。
・1992/93年のモン族、1997/98年のダオ族の貧困率は100%。
・特にダオ族の貧困率が悪化している。

表２－73　ベトナムにおける民族構成（全体に占める人口比率：%）

	キン族	テイ族	タイ族	中国系	コム族	ムン族	ヌン族	モン族	ダオ族	その他
1992/93	84.5	2.0	1.0	2.4	2.0	2.0	1.6	0.7	0.3	4.5
1997/98	83.3	1.8	1.1	2.0	2.0	2.4	1.7	1.0	0.3	4.5

原出所：Glewwe, et al., Who Gained from Vietnam's Boomn in the 1990s?: An Analysis of Poverty and Inequality Trends, 2000, p.39.
出典：貧困プロファイル、ベトナム社会主義共和国、2001年２月、国際協力銀行

表２－74　民族別の貧困率の推移（%）

	キン族	テイ族	タイ族	中国系	コム族	ムン族	ヌン族	モン族	ダオ族	その他
1992/93	55.1	81.3	82.3	11.8	75.4	89.6	91.8	100.0	88.5	90.0
1997/98	31.7	63.8	71.1	8.4	57.5	80.6	72.0	91.8	100.0	75.8

原出所：Glewwe, et al., Who Gained from Vietnam's Boomn in the 1990s?: An Analysis of Poverty and Inequality Trends, 2000, p.39.
出典：貧困プロファイル、ベトナム社会主義共和国、2001年２月、国際協力銀行

なお、キン族はマジョリティ・グループであり、マイノリティ・グループが比較的高地、農村に住んでいるのに対し、特に平地、都市、工業地域などに居住としている。

一方、「環境省 地球環境研究総合推進費プロジェクト アジア地域における経済発

展による環境負荷評価及びその低減を実現する政策研究」（ワーキングペーパー No.３;電子出版日：2007年２月１日）における「ベトナムにおける貧困とコーヒーの研究」によると、ベトナムの貧困層の民族別分布を、WB（2003年）とADB（2002）の関連データから表２－75とともに、以下のとおり分析している。

・多数を占めるキン族はその海岸沿いと紅河やメコン川デルタを中心に居住。
・一方、国土の７割を占める山岳部を中心に、人口の16%（2002年）を占める少数民族が居住。
・ベトナムでは1993年から約５年おきに家計調査が行われ、それに基づき貧困率を推計。
・所得で測った貧困率では、少数民族の貧困率は2002年で69%であるのに対し、キン族の貧困率は23%。
・貧困問題は少数民族の方がより深刻であるが、貧困層に占める割合でいえば、全人口に占めるキン族の割合の高さを反映して、貧困層の約70%がキン族。

表２－75　貧困層の民族別分布（%）

	全人口に占める割合			各グループ内の貧困率			貧困層の分布		
	1993	1998	2002	1993	1998	2002	1993	1998	2002
全人口	100	100	100	58	37	29	100	100	100
キン族および華人	87	86	84	54	31	23	81	72	70
少数民族	13	14	16	86	75	69	19	28	30

出典：「環境省 地球環境研究総合推進費プロジェクト アジア地域における経済発展による環境負荷評価及びその低減を実現する政策研究」（ワーキングペーパーNo.３；電子出版日：2007年２月１日）の「ベトナムにおける貧困とコーヒーの研究」、東京大学、東洋文化研究所、池本幸生

・表２－76はFood Poverty[8]及びOverall Poverty[9]の分析結果を示したもので、いずれの指標も1993年から2002年にかけて貧困率は着実に低下してきたとしている。

表２－76　貧困率[8,9]

		1993	1998	2002
貧困率（%）	Food poverty	24.9	15	10.9
	Overall poverty	58.1	37.4	28.9
貧困線（千ドン）	Food Poverty	750	1,287	1,381
	Overall Poverty	1,160	1,788	1,915

原出所：General Statistical Office and State Planning Committee(1994), Phung Duc Tung(2004)
出典：「環境省 地球環境研究総合推進費プロジェクト アジア地域における経済発展による環境負荷評価及びその低減を実現する政策研究」（ワーキングペーパーNo.３；電子出版日：2007年２月１日）の「ベトナムにおける貧困とコーヒーの研究」東京大学 東洋文化研究所 池本幸生

[8] 表２－76の数字が示しているのは、Food Poverty と呼ばれるもので、所得水準が食糧のみの購入にも不足する貧困（飢餓状態）を表す。

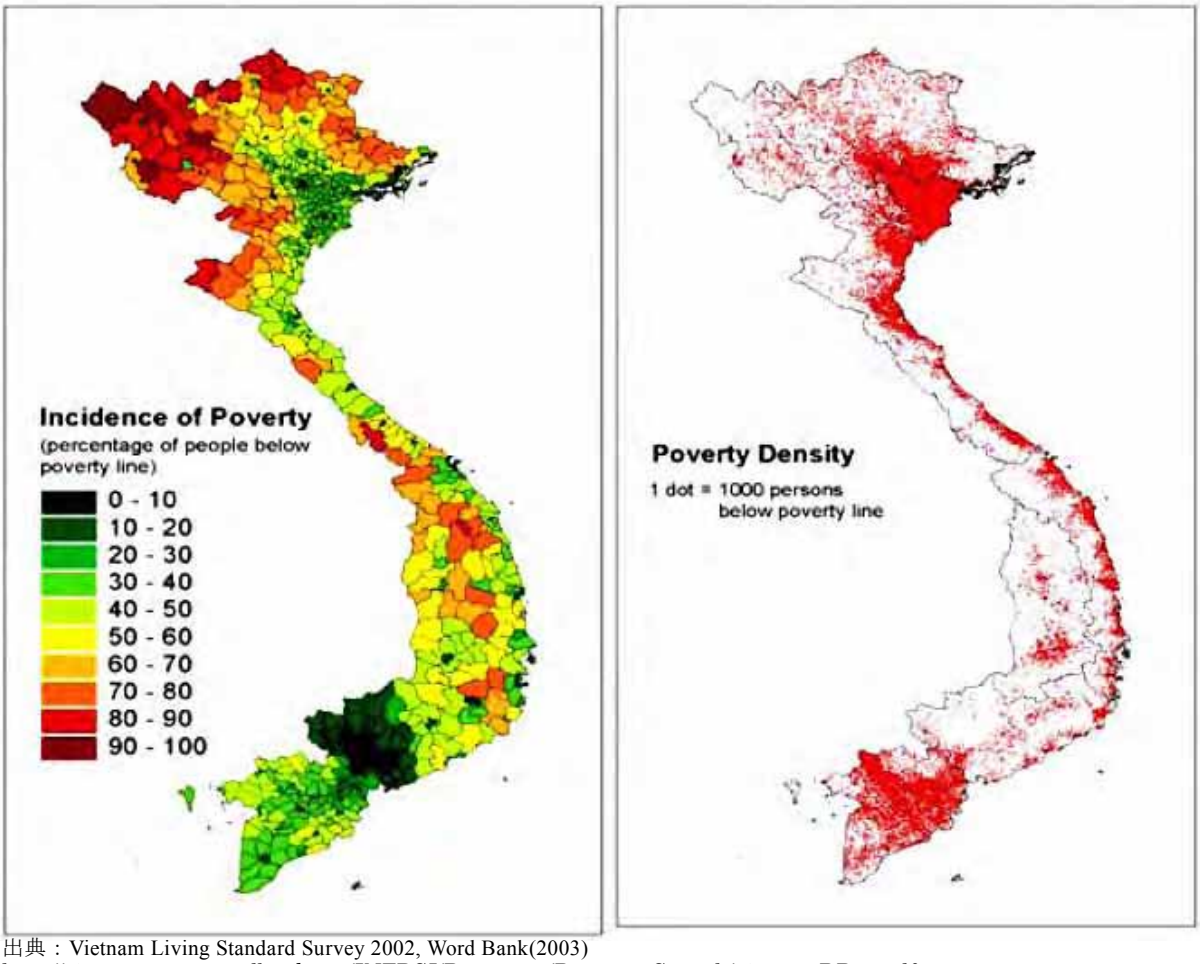
[9] 一般には、ベトナムで Overall Poverty と呼ばれる概念が用いられ、食糧以外にその他の必要最低限の支出も加えた支出額に所得が満たない貧困（一般的な貧困）を示す。

次に、全土の地域別貧困率と貧困分布を図２－26に、地域別少数民族の貧困率の変遷を図２－27に示す。これらから以下のことがわかる。

・貧困率は北部からメコンデルタ以北の山岳地帯で高い。
・貧困分布では紅河デルタ、メコンデルタの都市部及び沿岸部で高い。
・地域別では、1993年から2000年にかけて、中央高地を除いて貧困率が低下。

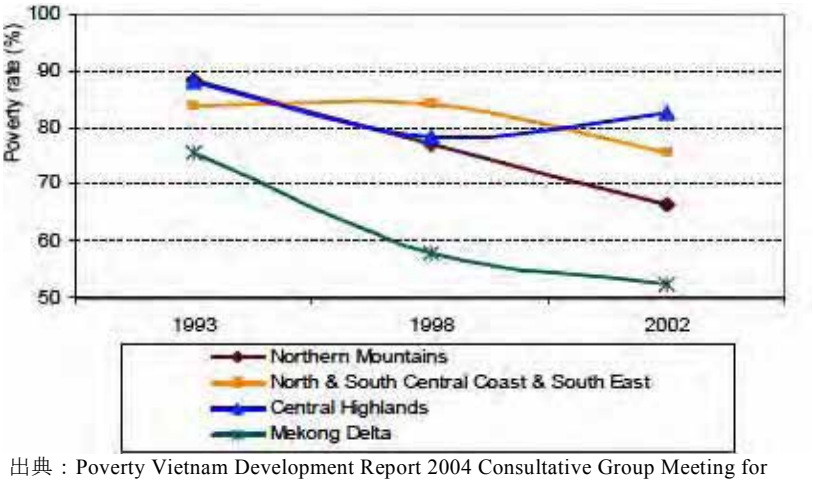
以上から、本事業の本格調査団は、社会配慮の観点から以下の点に留意して計画策定をする必要がある。

・少数民族居住地及び生活圏で事業計画をする場合の、これら居住地、生活圏（地域分断）等への影響が少なくなるように留意する。
・住民移転の場合には、法律及び補償以外に、少数民族の聖地、宗教的建造物等への配慮をする。
・経済発展とともに貧困は逓減していることを積極的に評価し、少数民族居住地及び生活圏で事業計画をする場合、強制的にではなく役務の提供等、建設事業等への積極的な参加を募ることも考えられる。



出典：Vietnam Living Standard Survey 2002, Word Bank(2003)
http://siteresources.wordbank.org/INTPGI/Resources/Pro-poor-Growth/vietnamDR04.pdf

図２－26　地域別貧困率（左）、貧困分布（右）



出典：Poverty Vietnam Development Report 2004 Consultative Group Meeting for

図２－27　地域別少数民族の貧困率の変遷

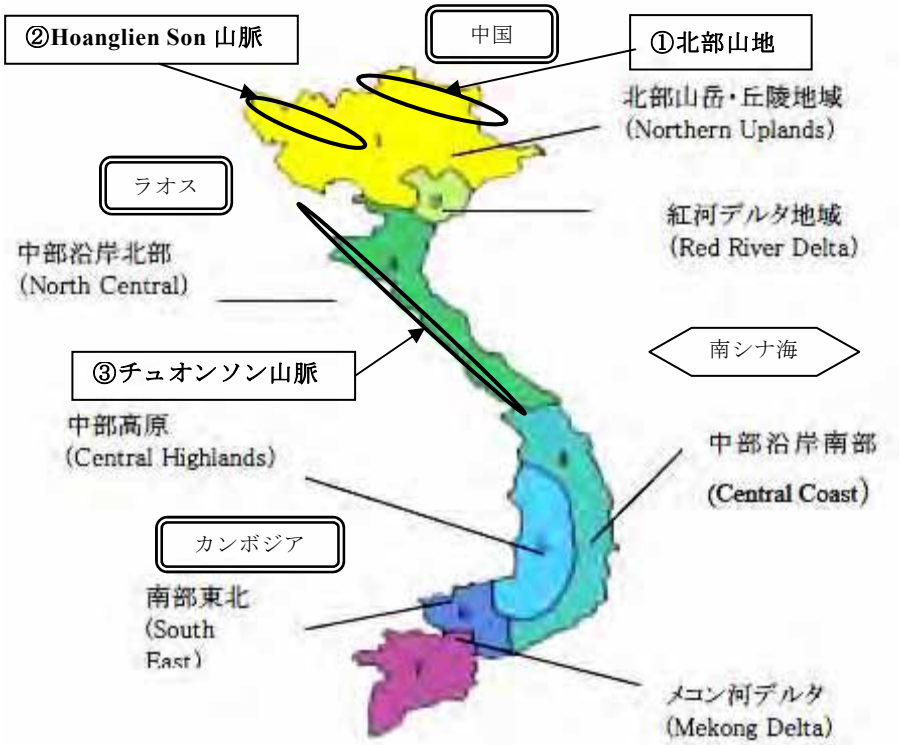
（６）自然環境

１）ベトナム国土

ベトナムは図２－28のとおり、北から南かけてS字を描く地形で全長約1,650kmの細長い国土を持つ。このため、北部と南部では気候に違いがみられ、大きな点としては北部では四季があるが、南部では雨季と乾季の熱帯性の気候となる〔２）の気候・気象参照〕。

また、地形は高い山はないものの以下のとおり大きく山岳・丘陵地、沿岸部、高原部、河川デルタ、低地等の地形を持ち、起伏に富んでいる。

・国土東部：南シナ海と接する。
・北部～北西部：中国とラオスに国境に接し、北東部の紅河デルタを囲む形で、「北部山地」と「Hoanglien Son Range （ホアンリエン・ソン山脈)」の山岳・丘陵地帯。
・中北部：中北部の西部はラオス国境に接し、チュオンソン山脈がカンボジア国境まで延びている。
・西部：カンボジア国境とはPlateau Tay Nguyen （中部高原）が」が南部のメコンデルタ方面まで広がる。
・南部：メコン河デルタが広がる。



注：本図は事前調査団により加筆。
出典：貧困プロファイル　ベトナム社会主義共和国、2001 年２月、国際協力銀行

図２－28　ベトナムの区分と国土外略図

ベトナムの国土は多様な自然条件を持つため天然資源及び生物的多様性（11,458種の動物相、21,017種の植物相及び約3,000種の微生物が確認されている）に富んでいる。

2）気候・気象

ベトナムの気候及び気象は大きく北部では四季があり、南部では乾季と雨季に分かれる。2005年における主要都市の月別降雨量、平均湿度、平均気温を表２－77から２－79に示す。

表２－77　月別降雨量（2005年）

（mm）

観測地	Jan.	Feb.	March	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec
Lai Chau	26	33	80	120	73	513	322	334	30	38	21	46
Son La	10	9	75	64	65	150	267	403	147	58	21	20
Tuyen Quang	20	18	82	121	110	280	167	340	172	11	44	39
Ha Noi	11	36	27	33	221	278	278	377	366	18	92	27
Bai Chay	4	25	29	27	247	340	628	364	167	92	87	6
Nam Đinh	14	23	27	38	73	67	241	324	496	63	210	18
Vinh	13	25	40	20	119	50	228	424	647	258	106	39
Hue	28	51	65	61	42	113	129	189	350	...	485	502
Da Nang	36	6	36	12	20	22	136	210	236	510	432	214
Qui Nhon	3	12	136	20	49	27	13	20	362	914	488	592
Playku	-	0	42	139	46	182	479	610	314	187	45	4
Da Lat	-	19	82	116	172	182	200	259	354	263	92	80
Nha Trang	6	0	38	3	0	32	42	11	258	487	355	567
Vung Tau	-	-	-	35	119	147	170	155	189	71	7	39
Ca Mau	-	-	7	5	213	227	400	166	380	497	207	161

出典：General Statistics Office of Vietnam, 2007

表２－78　月別平均湿度（2005年）

（%）

観測地	Jan.	Feb.	March	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec
Lai Chau	81	73	71	75	72	82	72	84	78	77	83	80
Son La	76	71	75	76	71	85	85	91	83	83	84	82
Tuyen Quang	86	86	86	85	81	83	83	89	85	84	86	81
Ha Noi	79	85	83	83	78	77	79	83	78	76	79	69
Bai Chay	80	89	87	87	86	87	86	87	83	77	82	72
Nam Đinh	83	91	87	88	82	77	81	86	85	80	83	76
Vinh	86	93	89	85	72	66	76	79	87	86	86	83
Hue	90	91	92	87	78	77	83	80	88	91	91	95
Da Nang	84	85	84	83	77	71	80	78	82	86	85	88
Qui Nhon	79	83	82	81	80	68	69	67	78	85	84	87
Playku	77	73	74	75	81	88	92	93	91	86	84	80
Da Lat	80	76	81	81	87	90	92	92	92	91	87	91
Nha Trang	77	80	80	80	76	73	76	74	78	83	80	84
Vung Tau	76	79	77	77	78	79	81	81	82	81	80	80
Ca Mau	78	79	76	75	80	82	87	84	83	85	82	84

出典：General Statistics Office of Vietnam, 2007

表２－79　月別平均気温（2005年）

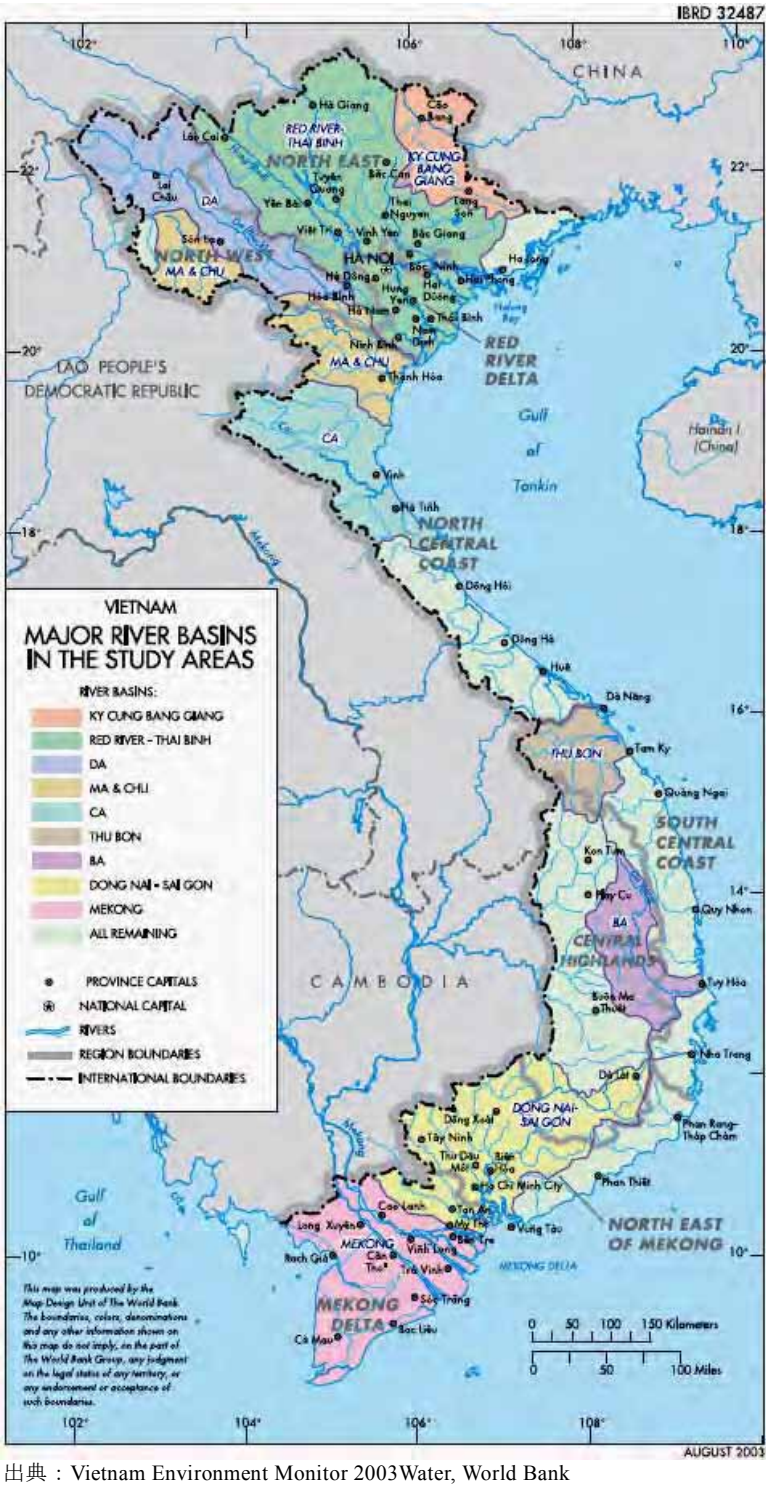
（ºC）

観測地	Jan.	Feb.	March	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec
Lai Chau	17.2	20.2	20.7	24.6	27.0	26.3	27.4	26.8	26.4	24.7	21.2	17.3
Son La	15.4	19.7	19.1	23.1	26.2	25.7	25.5	24.4	24.3	21.9	19.5	14.4
Tuyen Quang	15.8	17.9	18.9	24.2	29.1	29.4	28.8	28.0	27.8	25.0	21.9	16.4
Ha Noi	16.2	17.8	19.2	24.2	29.2	30.3	29.6	28.8	28.7	26.3	22.7	17.4
Bai Chay	15.8	17.3	18.3	23.4	28.1	29.0	28.5	27.8	27.8	25.5	22.2	16.7
Nam Đinh	16.2	17.8	18.8	23.7	29.0	30.3	29.6	28.5	28.0	25.8	22.4	16.8
Vinh	18.0	19.2	19.2	24.6	30.4	31.3	29.7	28.9	27.3	25.2	22.9	17.5
Hue	19.9	22.4	21.3	25.4	28.9	29.6	27.9	28.3	27.3	25.2	23.9	19.2
Da Nang	21.5	23.9	22.8	25.8	28.9	30.5	28.4	28.7	27.9	26.3	25.2	21.2
Qui Nhon	22.9	25.2	24.7	27.2	29.0	31.0	30.1	30.0	28.5	26.8	26.1	23.2
Playku	18.9	22.1	22.3	24.3	24.9	23.8	22.5	22.2	22.8	22.4	21.7	20.2
Da Lat	15.4	17.5	17.5	18.9	19.8	19.6	18.5	18.3	18.6	18.4	17.9	16.8
Nha Trang	23.4	25.2	25.2	27.3	28.9	29.7	29.1	29.5	28.1	27.3	26.6	24.2
Vung Tau	25.0	26.4	26.9	28.6	29.6	28.9	27.7	28.2	27.8	28.2	27.8	26.2
Ca Mau	25.8	27.0	27.7	29.2	29.0	28.6	27.2	28.1	27.8	27.6	27.4	25.8

出典：General Statistics Office of Vietnam, 2007

3）ベトナムの河川流域

ベトナムの河川流域は図２－29に示すとおり、大きく10流域に分かれ、南北にS字カーブを描いた長い地勢をもつ国土をほぼ横切る形で河川があることが特徴である。このため南北交通施設の建設に際しては河川を多く横切ることになり、当該河川環境及び流域自然の環境、水質等への影響を考慮する計画を検討する必要がある。



出典：Vietnam Environment Monitor 2003Water, World Bank

図２－29　ベトナムの河川流域図

表２－80主要河川の各観測地点における水深及び流速を示すが、河川によって、水深及び流速に大きな開きがあることがわかる。本格調査においては、水運開発に関し、河川の水深等を考慮し、水質汚濁を起こさないことを留意する必要がある。

表２－80　主要河川の水深及び流速（2005年）

主要河川・観測地点		水深（cm）		流速　(m^3/s)	
		Deepest	The most shallow	Deepest	The most shallow
Da river					
Station	Hoa Binh	1978	1016	8390	176
Thao river					
Station	Yen Bai	3213	2518	7450	138
	Phu Tho	1883	1354		
Lo river					
Station	Tuyen Quang	2378	1543		
Red river					
Station	Son Tay	1226	399	11500	979
	Ha Noi	952	158	8990	515
Cau river					
Station	Thai Nguyen	2387	2002	612	10
Thuong river					
Station	Cau Son	1470	1207		
	Phu Lang Thuong	512	−2		
Luc Nam river					
Station	Chu	1143	176	3010	
	Luc Nam	567	11		
Ma river					
Station	Cam Thuy	1844	1142	4530	79
Ca river					
Station	Dua	2317	1347	5100	73
	Yen Thuong	890	90	5460	111
Mekong river					
Station	Tan Chau	435	−56		
	Chau Doc	390	−68	6560	−1240

出典：General Statistics Office of Vietnam, 2007

４）ベトナムの国立公園･保護地域等

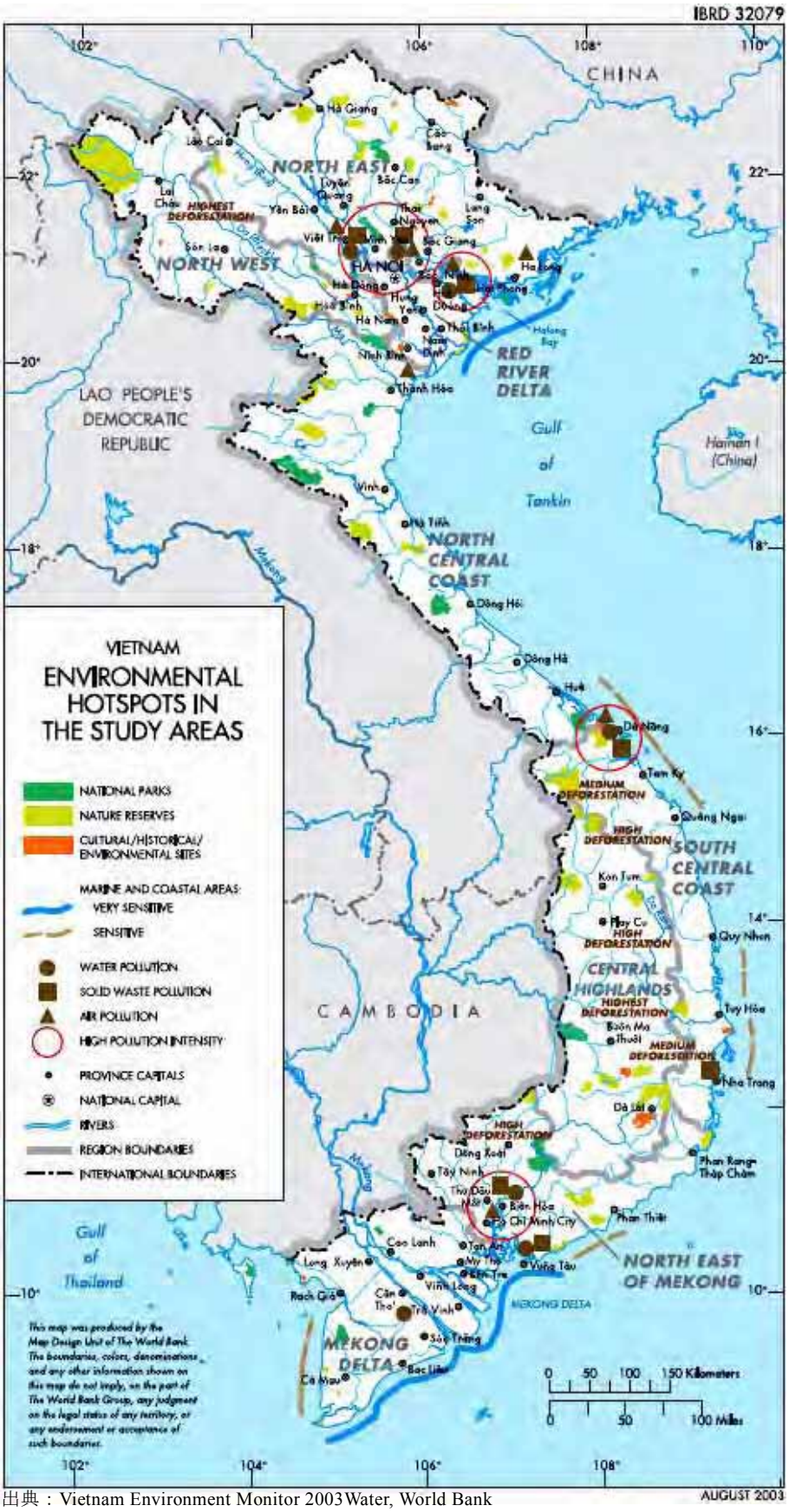
図２－30に国立公園、自然保護区及び文化・歴史遺産及び、環境汚染のある位置を示す。

図から国立公園等の位置に加え以下の環境問題があることがわかる。

・紅河デルタ、ダナン、メコンデルタに環境汚染（水質汚濁、廃棄物、大気汚染）がある。
・紅河デルタ及びメコンデルタ沖に、海域環境のセンシティブ重要地域が広がっている。

以上から、本格調査団は次の点等について留意する必要がある。

・運輸交通各セクターの計画を立てる際には、これら国立公園、自然保護区及び文化・歴史遺産への影響を最小限にする検討をする。
・環境汚染のある箇所については各提案計画実施による当該地域への直接、間接の影響が、更に悪化することのないよう十分検討する。
・一方、環境汚染のある箇所について各提案計画実施により直接、間接の当該地域への影響が〔その提案が、例えば高速道建設や高速鉄道利用増加に伴う車両渋滞が緩和され、NOx、SOxやSPM（浮遊粒子状物質）等の汚染物質低減による〕、環境質改善効果（プラスの影響）になるよう検討する。



出典：Vietnam Environment Monitor 2003Water, World Bank

図２－30　ベトナムの国立公園・自然保護区等分布図

５）ベトナムの生物学的多様性

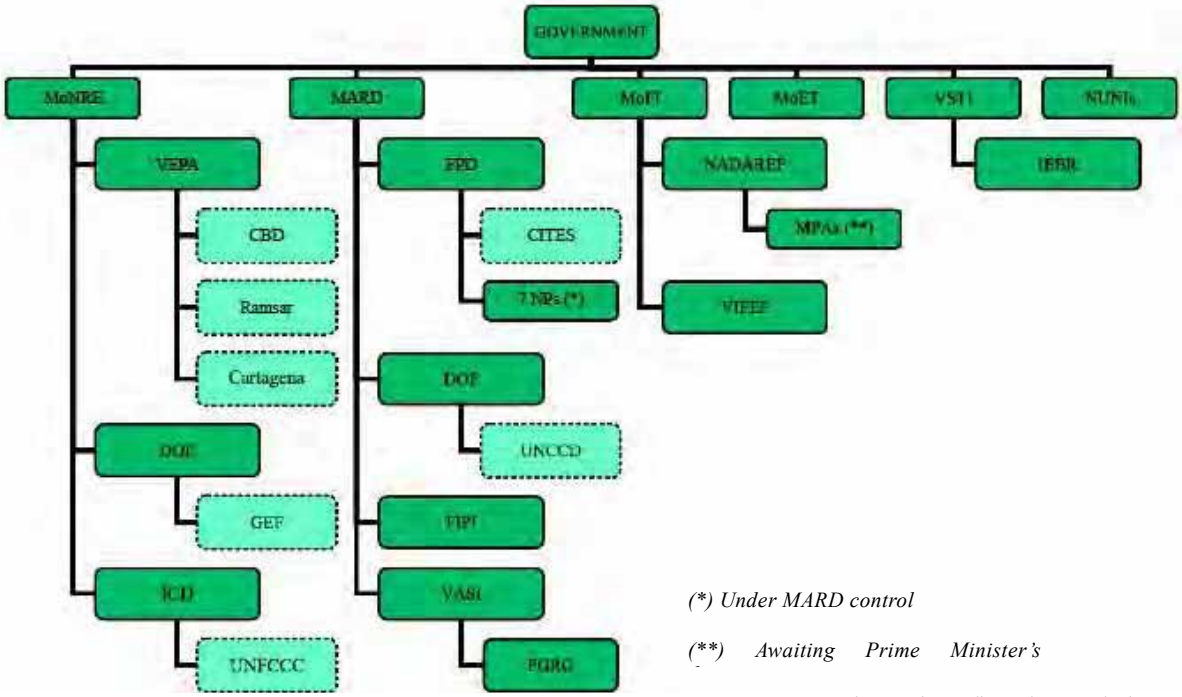
ａ）生物多様性保護に関する国家政策及び組織制度

既に、「２－３－１（１）環境法規」で記したとおり、ベトナムにおける最初の生物多様性保護に関する規制は1960年代に策定され、全国最初の保護区の設立と、貴重種保護について規定した。この迅速な決定が、1986年の国家陸生保護値域の設立につながった。1990年まで組織制度改革は遅々として実施されなかったが、1991年の「環境と持続的開発の国家計画（1991～2000年）の採択は、以下の生物多様性保護と持続可能な利用に関する一連の法律を整備することになった。

・1991年：森林開発と保護法（Law on Forest Development and Protection）
（2004年に改定）
・1993年：土地法（Land Law）（1998年及び2003年に改定）
・1993年：環境保護法（Law on Environmental Protection）（2007年に改定）
・2003年：水産漁業法（Law on Fisheries）
・2007年：生物多様性法

ｂ）生物多様性保護に係る組織的対応

生物多様性保護に係る中央政府の組織的対応は図２－31に示すとおり、多くの政府組織・機関が関係している。また、表２－81に主な組織の生物多様性保護に関する活動概要を示す。



(*) Under MARD control

(**) Awaiting Prime Minister's

MoNRE	: Ministry of Natural Resources and Environment
VEPA	: Vietnam Environmental Protection Agency
CBD	: Convention on Biological Diversity Focal Point
Ramsar	: Ramsar Convention Focal Point
Cartagena	: Cartagena Protocol on Bio-safety
GEF	: Global Environment Facility Focal Point
DOE	: Department of Environment
MARD	: Ministry of Agriculture and Rural Development
FPD	: Forest Protection Department
CITES and Flora	: Convention on International Trade in Endangered Species of Wild Fauna
DOF	: Department of Forestry
UNCCD	: UN Convention on Combating Desertification Focal Point

UNFCCC	: UN Framework Convention on Climate Change Focal Point
FIPI	: Forest Inventory and Planning Institute
NP	: National Park
MOFi	: Ministry of Fisheries
NADAREP	: National Directorate of Aquatic Resources Exploitation and Protection
VIFEP	: Vietnam Institute of Fisheries Economics and Planning
DEP	: Department of Aquatic Resources Exploitation and Protection
MOET	: Ministry of Education and Training
NUNIs	: National Universities
VSTI	: Vietnam Science and Technology Institute
IEBR	: Institute of Ecology and Biological Resources
VASI	: Vietnam Agricultural Science Institute

出典：Vietnam Environment Monitor 2005 Biodiversity, World Bank

図２－31　生物多様性保護に係る中央レベルでの組織体制

表２－81　主要組織の生物多様性保護に関する責務・活動概要

組織	責務・活動概要
計画投資省（MPI: Ministry of Planning and Investment）	財務省（MOF）と共に、予算案の概算と主要省庁及び関連省（Provinces）との予算配分に関する交渉に対する責務を負う。また、MPI は、科学教育環境局を通じた環境事業の企画と、生物多様性条約のODA事業の調整の総責任を負う。
天然資源環境省（MONRE: Ministry of Natural Resources and Environment（MoNRE）	MONREは環境保護全体の責務を持ち、生物多様性条約（CBD：Convention on Biological Diversity）とラムサール条約の中心的役割をになう。 ・MONREの環境局（DOE：Department of Environment）は、生物多様性や湿地に関する法的文書、戦略や政策の策定をする。 ・MONREのベトナム環境庁（VEPA：Vietnam Environmental Protection agency）は、CBDとラムサール条約の国内の調整や実施に責務を持つ実施機関である。 ・MONREのEIA評価局（DOEIA：Department of EIA and Appraisal）は、EIAとその評価の管理責任を持ち及び天然資源に関するアドバイスを提供する。
農業地方開発省（MARSD: Ministry of Agriculture and Rural Development）	MARD は農業、森林及び地方開発全体の責務を負う。 ・MARDの森林保護局（FPD：Forest Protection Department）は、国家SUF（Special Use Forest）制度及び他の森林保護分野における野生生物保護の管理責任を持つ。また、FPDはベトナムのCITES（ワシントン条約）管理当局及び、ベトナム保護基金の管理者である。 ・MARDの森林局（DOF：Department of Forestry）は、５百万ヘクタールの植林事業 の実施の監督責任を持ち、UNCCD（UN Framework Convention on Climate）実施の中心的役割を担う。
漁業省（MOFi: Ministry of Fisheries）	MOFiは、全ての海域、海岸及び淡水域生態系の水産資源の責務を持つ。またMOFiは、漁業管理規則の策定と実施及び国家海域保護区域制度の開発と管理の責務を負う。 ・国家水産資源探査保護総局（NADAREP：National Directorate of Aquatic Resources Exploitation and Protection）は、水産資源の多様性や遺伝資源と生物多様性の管理とモニタリングの責務を負い、陸水域及び海域と水産資源の自然の生態を保護する。
文化情報省（MCI: Ministry of Culture and Information）	MCIは、文化及び歴史的区域の管理責任をMARDと分担している。即ち、MCIは歴史あるいは文化的部分の保護、一方MARDは当該区域の森林の保護に責任を負う。
ベトナム国家観光局（VNAT: Vietnam National Administration of Tourism ）	VNATは、国家観光戦略 と国立公園及び世界遺産への観光促進に関する責務を負う。
ベトナム科学技術研究所（VSTI: Vietnam Sciences and Technology Institute）	VSTIは多様な研究所を持ち、環境問題に関する主要省庁への技術的アドバイスを行う。生物多様性及び持続的利用に関し、多様な応用背物多様性研究を行っている生態系及び生物学的資源研究所（IEBR：Institute of Ecology and Biological Resources）と協力関係にある。
教育訓練省（MOET: Ministry of Education and Training）	MOETは、植物学、動物学、生物学、生態学、及び自然保護に関する訓練の実施及び、これら分野における研究への参加。
省（及び市）人民委員会（PPCs: Provincial（and City） People's Committees）	PPCs は、省（あるいは市）レベルでの多様な主要局の生物多様性保護活動への調整を行う。また、PPCs はほとんどの（Special Use Forest）及びMPA（Marine Protect Area）の管理責任を負う。さらに、PPCs は、地方レベルでのセクター計画や事業に生物多様性を組み込み確かなものとする。

出典：Vietnam Environment Monitor 2005 Biodiversity, World Bank

ｃ）ベトナムの動物相・植物相の生物多様性及び絶滅危惧種

ベトナムの生物多様性は11,458種の動物相、21,017種の植物相及び約3,000種の微生物が確認されている。表２－82にベトナムの生物種及び、表２－83にベトナムにおける絶滅危惧種を示す。

表２－82　ベトナムの生物種

生物種グループ	ベトナムの生物種数（種）	地球上の生物種数（概算）	ベトナムの地球全体の生物種に占める率（%）
陸生植物	13,766	220,000	6.3
全 昆 虫	7,750*	750,000	1.0
淡水昆虫	670		
海水昆虫	2,500		
魚　　類	3,170	30,000	10.6
爬 虫 類	286	6,300	4.5
両 生 類	162	4,184	3.8
鳥　　類	840	9,040	9.3
哺 乳 類	310	4,000	7.7

注：実際は確認されている数以上の種がいると考えられている。

出典：Dang Huy Huynh, 2005. Present Status and Management Situation of Biodiversity in Vietnam. Paper presented at Vietnam environmental and Socio-economic Issues Conference, Hanoi, April 2005

表２－83　ベトナムの絶滅の恐れのある種

分類	ベトナムの生物種数（種）	ベトナム国内で絶滅の恐れのある種（種）*	地球上で絶滅の恐れのある種（種）**
哺乳類	310	78	46
鳥　類	840	83	41
爬虫類	286	43	27
両生類	162	11	15
魚　類	3,170	72	27
無脊椎動物		72	NE
植　物	14,000	309	148
菌　類		7	NE
藻　類		9	NE
合　計		684	304

注：NE = not evaluated

出典：* In categories Endangered, Vulnerable, Rare and Threatened, following Red Data Book of Vietnam. (1992, 1996, 2000).

** In categories Critically Endangered, Endangered and Vulnerable, following IUCN (2004).

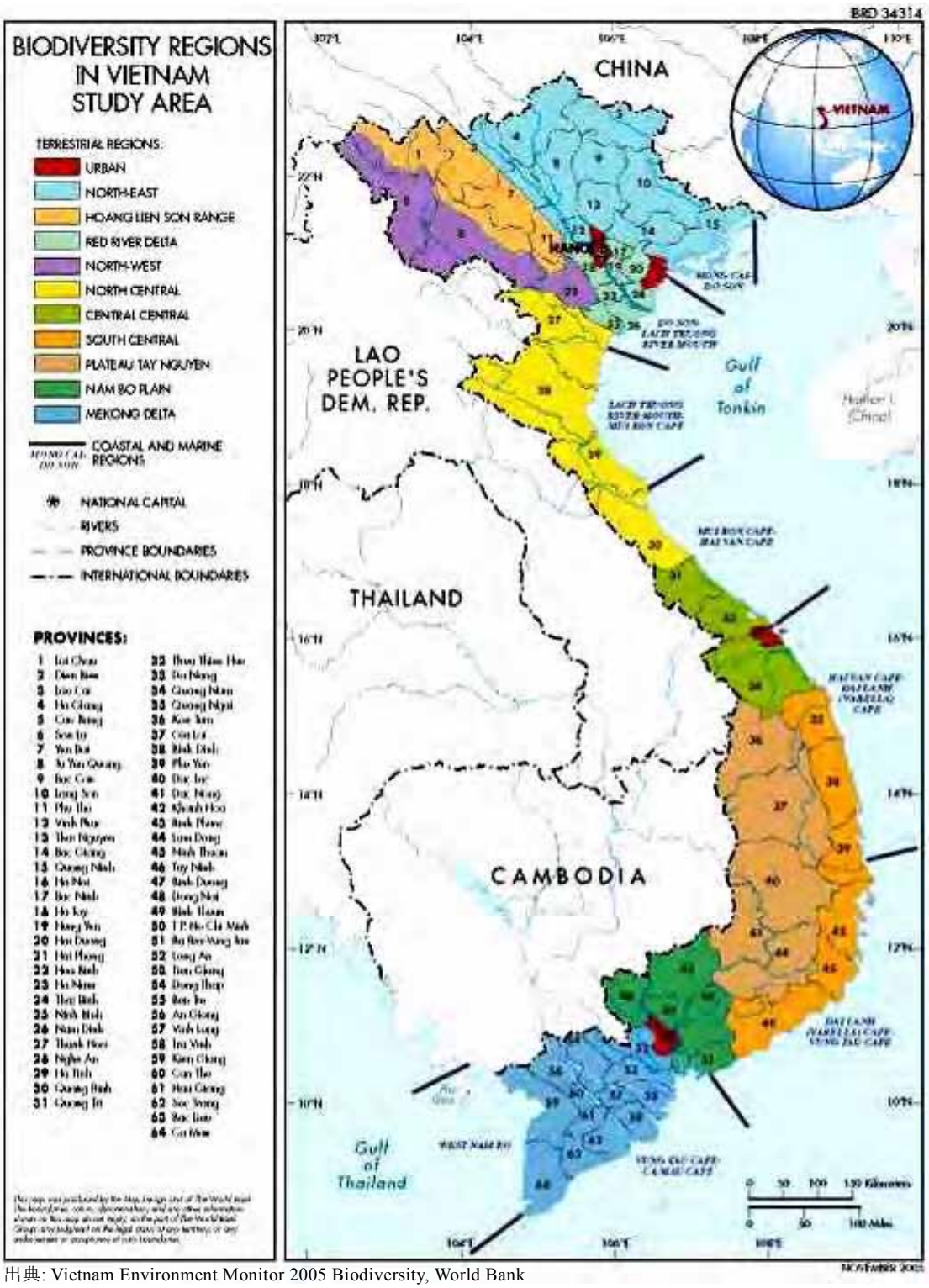
ｄ）陸生の生物多様性

ベトナムの陸生の生物多様性は表２－84に示すとおりその特徴から10地域分けをしている。表２－84、図２－32及び図２－33にベトナム各陸生における生物多様性地域別の概要及び、地域的広がりを示すそれぞれ示す。

表２－84　ベトナム全土の陸生生物多様性の概要

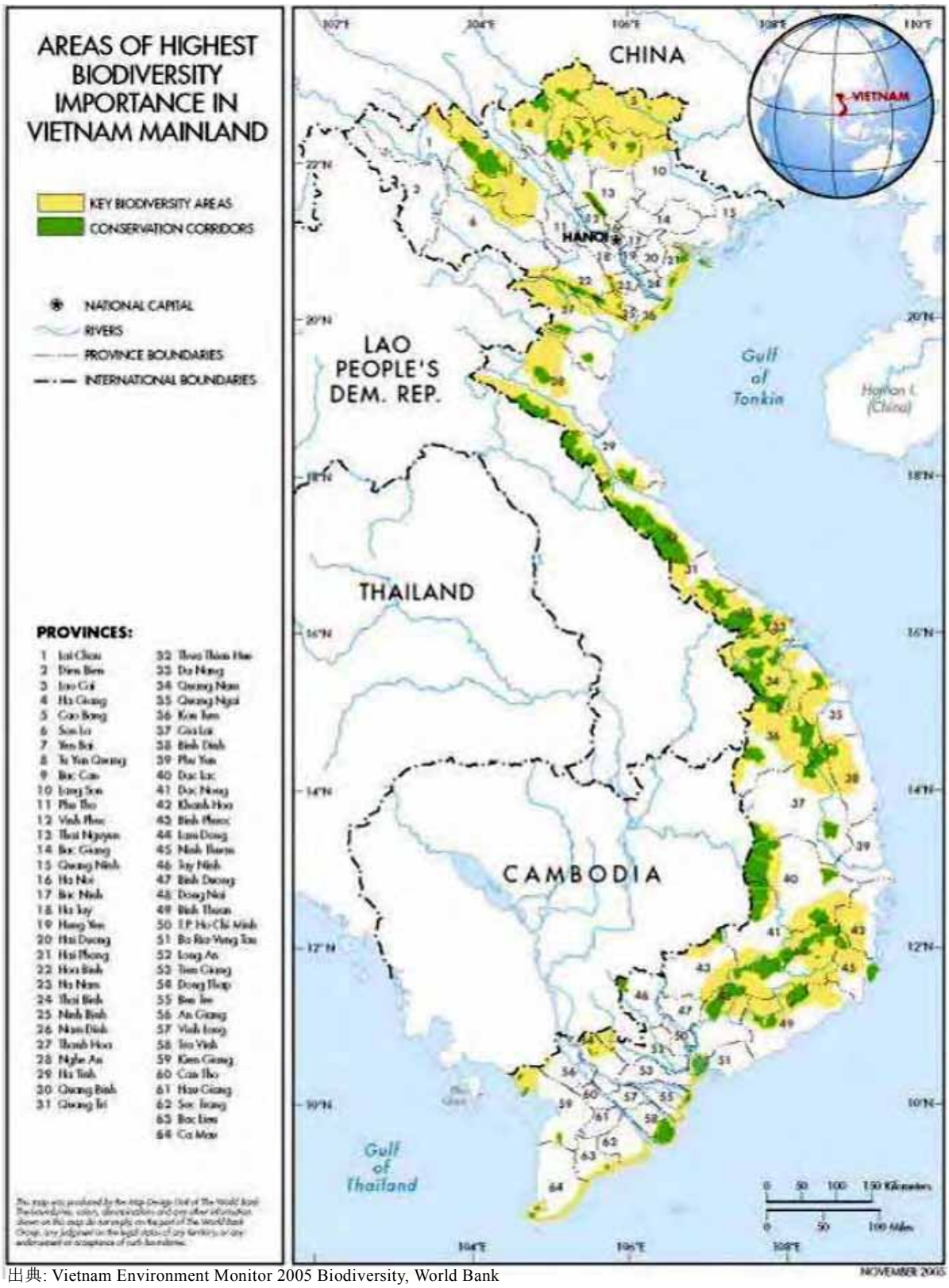
	地域	陸生生物多様性
1.	北東地域（Northeast）	The region has many ecosystems ranging from limestone mountains to low hills and a narrow coastal plain. It includes many picturesque sites of important heritage value: the Ha Long Bay area, Cat Ba Island, and the Ba Ba Lake area. The fauna and flora of the region are very rich, with a number of rare endemic species such as musk deer （Moschus caobanghensil） and snub-nose monkey （Trachypithecus avunculus）. Forest cover was once around 50 percent but has been seriously depleted due to shifting agriculture and illegal logging.
2.	ホアンリエン・ソン山脈（Hoang Lien Son Range）	Vietnam's most important mountain range with the country's highest peak, Phansipan. This region has diverse biological resources, particularly medicinal plants of value.
3.	紅河デルタ（Red River Delta）	One of the two largest river deltas in Vietnam. The region possesses a typical wetland ecosystem, including Xuan Thuy, the first Ramsar site of Vietnam.
4.	北西地域（Northwest）.	Although not extensive, the forests of this region represent well-defined ecosystems at different altitudes. Biodiversity per unit area may be low, but there are about 38 rare animal species and several important plant species such as ginseng and Fokienia hodginsii.
5	北部中央地域（North Central （Bac Trung Bo））	A typical feature of the region is the long but narrow band between the Truong Son Range and the sea. Rich forest still covers a long strip of the Truong Son Range, near the Lao border. The varied relief explains the rich biodiversity of the region with a number of endemic and endangered species, such as the blue pheasant with white tail （Lophura hatinhensis） and the Hatinh monkey （Trachypithecus francoisi hatinhensis）. Over the past five years, two new mammal species, saola （Pseudoryx nghetinhensis） and the large muntjiac （Megamunticus vuquangensis）, have been discovered in this region.
6.	中央地域（Central （Trung Trung Bo））	The region has transitional features between the limestone mountains of the North and "earth" mountains of the South. This creates an area with unusual biodiversity characteristics including endemic species and the Truong Son muntjiac, a newly discovered mammal species.
7.	南部中央地域（South Central （Nam Trung Bo））	This region has coastal characteristics, and is not of high biodiversity value.
8.	中部高原（Tay Nguyen Plateau）	This region lies at the Indochinese junction between Vietnam, Lao, and Cambodia. The region has great biodiversity wealth, including many large mammals such as elephants, tigers, panthers, wild buffalo, and kouprey. The region is also home to rare plant species; for example, ginseng, Ngoc Linh, and the Dipterocarpaceae.
9	ナムボー平原（Nam Bo Plain）	It is a transitional region between the high plateau of Tay Nguyen and the plain of Nam Bo. There are many rare tree species in this region. However, its biological resources have been depleted due to the development of hydroelectric dams and of rubber and cacao plantations.
10.	メコンデルタ（Mekong Delta）	This is the largest river delta in the country. The region possesses a diversity of mangrove and paper bark wetland ecosystems that provide habitat for the eastern sarus crane （Grus antigone）.

出典：Vietnam Environment Monitor 2005 Biodiversity, World Bank



出典: Vietnam Environment Monitor 2005 Biodiversity, World Bank

図２－32　陸生生物多様性 10 地域図

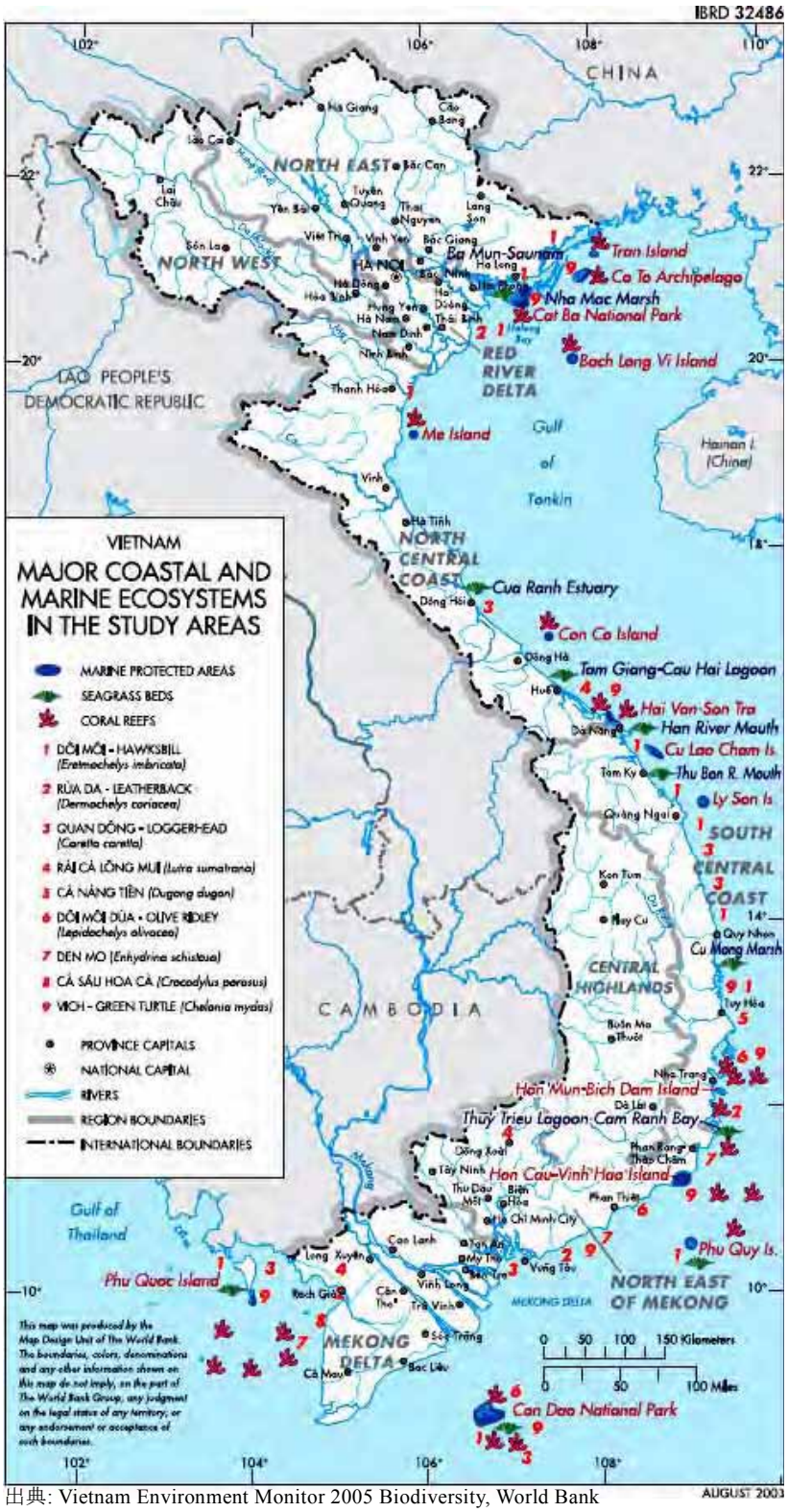


出典: Vietnam Environment Monitor 2005 Biodiversity, World Bank

図２－33　ベトナム全土における最も重要な生物多様性保護地域図

d）沿岸水域生物多様性

ベトナムの海外水域は、国土東側に東シナ海に面しており沿岸海水域にもマングローブや珊瑚等、豊富な９地域の生物多様性の広がりを持っている。図２－34にその広がりを示す。



出典: Vietnam Environment Monitor 2005 Biodiversity, World Bank

図２－34　ベトナム全土の地域別沿岸水域生物多様性概略図