

No. 543/QĐ-BNN-KHCN

Ha Noi, 23 March 2011

**DECISION**

**To promulgate the Action Plan on Climate change response of agriculture  
and rural development sector in the period 2011-2015  
and vision to 2050**

**MINISTER OF AGRICULTURE AND RURAL DEVELOPMENT**

According to the Decree 01/2008/ND-CP of 3 January 2008 by the Government to regulate functions, duties, authority and organization structure of the Ministry of Agriculture and Rural Development (MARD) and Decree 75/2009/ND-CP of 10 September 2009 by the Government to revise Article 3 of the Decree 01/2008/ND-CP;

According to the Decision 158/2008/QĐ-TTg of 2 December 2008 by the Prime Minister to endorse the National Target Program on Climate change response;

Considering paper No. 01/TTr-VPDBKH of 22 March 2011 by the Standing Office of the Steering Committee for the Action Program on Climate change response of agriculture and rural development sector requesting for approval of the Action Plan on Climate change response of agriculture and rural development sector in the period 2011-2015 and the vision to 2050;

Upon the request of the Director General of the Science, Technology and Environment Department

**DECIDES**

**Article 1:** To promulgate under this Decision the Action Plan on Climate change response of agriculture and rural development sector in the period 2011-2015 and the vision to 2050.

**Article 2:** To assign the Science, Technology and Environment Department (the Standing Office of the Steering Committee for the Action Program on Climate change response of agriculture and rural development sector) to assist the Steering Committee to monitor, guide and supervise related institutions to implement the Action Plan.

**Article 3:** The Decision will be in effect since the date of signature.



**ACTION PLAN ON CLIMATE CHANGE RESPONSE OF AGRICULTURE  
AND RURAL DEVELOPMENT SECTOR IN THE PERIOD 2011-2015 AND  
VISION TO 2050**

(Promulgated under the Decision 543/QĐ-BNN-KHCN of 23 March 2011 by the  
Minister of Agriculture and Rural Development)

**I. OBJECTIVE**

**1.1. Overall objective**

Strengthen the capacity for climate change response of agriculture and rural development sector in the period 2011-2015 in order to mitigate the climate change impact and contribute to reduce green house gas emission, thus ensuring sustainable development of all the sub-sectors in the countrywide; assure protection of people's life, prevent and mitigate natural disasters caused by climate change and sea level rise, whilst provide opportunities for sustainable development of all sub-sectors in agriculture and rural sector under the climate change context with the focuses on the followings:

- Stabilize, ensure safety for residents of the cities, regions, particularly the Mekong river delta, the Northern delta and the Central coastal zone;
- Ensure stable production of agriculture, forestry, fisheries and salt towards low emission orientation and sustainable development;
- Ensure food security, maintenance of 3.8 million ha of paddy land, of which 3.2 million ha with 2 crops per year at least;
- Ensure safety of the dike system, civil works, technical and economic infrastructure, that meets the requirements for natural disaster prevention and mitigation;
- Keep the sector growth of 20%, poverty reduction rate of 20% and reduction of green house gas emission at 20% in each 10-year period.

**1.2 Specific objectives**

- i) Strengthen capacity in the areas of research and forecasting of climate change impacts to agriculture, irrigation, forestry, salt production, fishery and rural development, which serve as the base for formulation of policies, strategies and solutions for climate change mitigation and adaptation by the sector;

- ii) Develop policies, integrate climate change issue into sectoral programs and specific duties; strengthen and complete the organization system, identify responsibilities of related institutions and capital sources, management mechanism of specific duties in the action program for climate change mitigation and adaptation of the sector;
- iii) Propose measures and policies to support the areas negatively effected by the climate change so as to ensure sustainable production of different sub-sectors in agriculture sector;
- iv) Enhance international cooperation, link with international and regional programs and receive international support in terms of expertise and technologies for climate change mitigation and adaptation of the sub-sectors;
- v) Develop human resources for the sector activities related to climate change mitigation and adaptation;
- vi) Increase awareness of staff and officials of the sector and the community on climate change mitigation and adaptation in agriculture and rural development sector;
- vii) Ensure participation of and equal benefit for organizations, individuals, community and all other actors in climate change mitigation and adaptation activities.

## **2. KEY DUTIES**

### ***Duty 1: Evaluation of the impacts of climate change and sea level rise to each sub-sector of agriculture and rural development sector***

#### ***A. Objective***

Evaluation of the impacts of climate change and sea level rise to each sub-sector of agriculture and rural development sector

#### ***B. Contents***

- i) Conduct investigation and survey of the practical situation, use models and other modern tools to analyse and evaluate the climate change impacts and sea level rise to individual sub-sectors at each region (inland, island) at the countrywide;
- ii) Identify evaluation criteria for climate change impacts at each sub-sector basing on the scenarios for climate change and sea level rise;  
Study impacts of agricultural sector to the climate change (emission of green house gas / emission to cause green house effects);
- iii) Propose measures / solutions for reduction of green house gas emission, both structure and non-structure solutions for individual sub-sector at each region to respond to the climate change and sea level rise.

### ***C. Key outputs***

In-depth study reports on evaluation of climate change impacts in each sub-sector of agriculture, forestry, fishery, irrigation, salt production, rural infrastructure; recommended solutions to mitigate the impacts of agriculture production areas to the climate change;

Solutions / measures and plans to respond to climate change and sea level rise to individual sub-sectors at each region in the entire country.

### ***Duty 2: Formulation of projects / programs for each sub-sector appropriate to the specific localities to respond (adapt and mitigate) to the climate change and to generate opportunity for sectoral development***

#### ***A. Objective***

Recommend programs / projects and areas for climate change response, including policies, long and short-term plans, investment programs / projects of the whole sector and its sub-sectors.

#### ***B. Contents***

- i) Evaluate the existing policies, long and short-term plans of the sector and its sub-sectors from the view of climate change impact and sea level rise;
- ii) Evaluate the current status and capacity for climate change response of residential areas and infrastructure systems of the sector and its sub-sectors at different regions;
- iii) Recommend structure measures (new construction / upgradation) and non-structure ones of individual sector and inter-sectors to respond to climate change for each period;
- iv) Recommend programs / projects on formulation of policies, long and short-term plans of the sub-sectors in the context of climate change in the period 2011-2015 and the vision to 2050, including the analysis of the economic, financial, social and environmental feasibility;
- v) Make detailed plans and implement the approved programs / projects.

***Recommended activities for each sub-sector shall focus on the following main contents:***

#### ***a. For agriculture***

- *Study the agriculture land planning, particularly paddy land under the climate change context, attention should be paid to the comprehensive evaluation of the*

*adaptation capacity, forecasting of the decreased productivity of paddy crop in line with the climate change scenarios at the 7 ecological zones;*

- *Change the cropping pattern and schedules as well as appropriate seeds resistant to the climate change conditions at different ecological zones;*
- *Study, select and apply into practical production the crop seeds and animal husbandry in the way to minimize the causes to the green house gas emission and improve the climate change adaptation.*
- *Develop animal husbandry with priority to animal breeding that has highly resistant capacity to the living environment; link animal husbandry practices with feed processing industry and treatment of animal wastes (under the form of bio-gas);*
- *Finalize the production standards and regulations to ensure the complete chain from agriculture production, feed processing, livestock production and waste management appropriate with the climate change condition;*
- *Develop the plan to apply advanced technologies in treatment of organic rubbish into organic manual, not to bury the rubbish to compost the manual in order to limit bad effects to the environment and mitigate the methane gas emission; undertake measures to best absorb methane gas from the existing rubbish dump for energy production.*
- *Apply GAP process in cultivation; employ fertilizer and pesticide saving cultivation measures; apply water saving utilization measures; minimum land preparation; water and fertilizer regulating techniques to minimize production of methane gas on paddy field; adjust cropping patterns toward the direction of reducing emission from crops production crops while increasing bio-energy crops;*
- *Apply GAP process in livestock production to improve feed utilization coefficient, reduce emission and cost; apply bio-gas.*

**b. For forestry**

- *Undertake programs/projects to improve forest quality and protection functions, particularly develop watershed, mangrove forest and coastal forest for wave, wind and moving sand prevention;*
- *Develop, undertake plans on deforestation prevention, fire and pest management, forest plantation and enrichment;*
- *Develop and undertake some coastal eco-economic to respond to climate change and sea level rise, particularly at most vulnerable areas;*
- *Develop and undertake some programs/projects related to Kyoto protocol mechanism on reduction of emission from deforestation and degradation (REDD), Decree 99/2010/NĐ-CP on payment for forest environmental services; further develop and undertake clean development mechanism (CDM)*

*related projects in close connection with pilot program on payment for forest environmental services (PES);*

- *Develop and effectively use barren land and denuded hills to create employment for laborers, alleviate poverty, stabilize resettlement and cultivation (linkage with desertification convention in accordance with Decision No. 204/QĐ-TTg of the Prime Minister);*
- *Study and adjust plan and strategy on natural biodiversity system management, biodiversity (linkage with implementation of the biodiversity convention) for climate change adaptation.*

### **c. For fishery**

- *Assess climate change impact on aquaculture production area, productivity and resources. Propose measures to respond, adapt and protect fisheries resources for individual areas, region when sea level rise;*
- *Study to improve aquaculture production technology and new breeds; exploitation technologies that are appropriate with climate change and sea level rise. Select new breeds that are capable to respond to severe weather conditions with high diseases resistance;*
- *Study and develop incentive policies on fishery sector development and insurance under climate change context; policies on financial support, establishment of the fund for renewable fisheries resources, shifting structure of fisheries exploitation in coastal and off-shore areas; apply new technologies in fisheries exploitation, artificial aquacultural breeds production to reproduce and rehabilitate fisheries resources;*
- *Undertake Decision No. 485/QĐ-TTg dated 02/5/2008 of the Prime Minister ratifying Proposal on protection of rare, precious fisheries species that are in danger of being extinct by 2015 and vision to 2020: during 2008 – 2010, develop pilot protection areas of some endemic fisheries species, establish turtle reproduction area in Con Dao for period; during 2010 – 2015, establish 15 protected areas for marine and coastal species; during 2016 – 2020, establish and supplement 22-23 precious aquaculture species protection areas.;*
- *Apply GAP in quacultural sector to improve feed production effectiveness and reduce cost; deal with organic waste treatment; reduce fishery exploitation cost.*

### **d. For water resources**

- *Assess current status and identify climate change respond capacity of various hydro-structures in different regions;*
- *Consolidate steering and command system for dyke protection and natural disasters mitigation; supplement regulations and cooperation mechanism from central down to local level related to climate change response in case of*

*emergencies and natural disasters extremes. Strengthen facilities and professional capacity for on site-response teams when natural disasters happen. Enhance capacity on advisory, steering, execution and supporting decision making on early warning of natural disasters;*

- *Improve science-technology capacity and knowledge on hydraulic structures planning, design and construction. Develop irrigation measures, procedures on hydraulic structures management, operation and regulation in order to avoid negative impacts while minimizing risks created by climate changes. Save water on production and livelihood consumption;*
- *Review plan, improve and newly develop river bank, sea dyke and river-gate dyke systems to ensure prevention of sea level rise in accordance with different scenarios developed for individual periods;*
- *Review plans, upgrade and construct structures related to salinity intrusion prevention, water supply and drainage, particularly for Red river and Mekong delta as well as coastal areas so as to ensure prevention of sea level rise according to scenario designed for specific periods;*
- *Develop special supporting options for residential areas, transportation, public structure, etc. in flood vulnerable prone areas to provide local people safe shelters during flood reason, particularly in Mekong delta and some parts of the central region; migrate people out of high risk areas with frequent occurrence of flash-flood, landslide and coastal erosion;*
- *Develop program to upgrade hydraulic and dyke systems, flood prevention and control, reservoir management while promoting water saving utilization;*
- *Develop hydraulic structure to protect coastal cities, agricultural areas and key economic zones to respond to climate change and sea level rise;*
- *Integrate climate change issues in development of various measures to ensure water security for hydraulic structures, safe dyke and reservoir systems;*
- *Apply water saving irrigation techniques as sprinkler irrigation, drop irrigation, surface irrigation for paddy land; rehabilitate and upgrade to avoid water loss on canal systems; appropriately operate to increase gravity irrigation areas while saving water pumping energy.*

***e. For salt production***

*Review investment plan in intensive salt production areas, clearly identify area of large impact, develop measures to minimize negative impacts caused by climate change and sea level rise;*

- *Apply new science and technologies in salt production to improve productivity, quality and contribute to improve livelihood of local people engaged in salt production so as to reduce pressure on coastal population density;*
- *Invest in salt production infrastructure and facilities including: embankment, pumping stations, sluices, sea water supply canals, drainage systems for both*

*transportation and on-farm structures; implement policies in accordance with Decision No.161/QĐ-TTg dated 05/02/2007 of the Prime Minister ratifying salt production development plan to 2010 and 2020.*

**f. For rural development**

- *Review rural development plan, clearly identify areas that are most vulnerable to impacts from climate change and sea level rise;*
- *Consolidate rural infrastructure: ensure safe transportation roads, markets, schools, water supply and rural sanitation structures when facing up with damages derived from climate change;*
- *Develop measures to provide special support on safe shelters to local people, particularly in Mekong delta and some parts of central region; migrate local people out of high risk areas in terms of flash flood, landslide, coastal erosion and others;*
- *Carry out studies on scientific, practical basis and develop socio-economic development measures in drought and semi-drought areas;*
- *Apply advanced and green production and processing technologies;*
- *Disseminate knowledge, information to improve community awareness.*

**C. Key outputs**

**a. Agricultural sector**

- *Programs/projects related to climate change response include: policies, plans, projections, sector and sub-sectors investment projects/programs;*
- *Develop national, ecological region and provincial based cropping pattern plan under climate change context;*
- *Develop thematic study reports on adaptation capacity, green house gas emission mitigation;*
- *Develop projection on shifting of cultivation system in different regions under climate change context;*
- *Introduce breeds and seedlings that are suitable to climate change adaptation for individual regions.*

**b. Forestry sector**

- *Forest development plans under climate change context;*
- *Coastal ecological-economic models for climate change adaptation;*
- *Measures on sustainable management and development of mangrove forest and protection forest for wave, wind and coastal sand prevention under the context of sea level rise and increasing natural disasters;*
- *Programs/projects related to post Kyoto protocol on reduction of emission from deforestation and degradation (REDD); clean development mechanism*

*related projects (CDM) in close connection with pilot program on payment for forest environmental services (PES);*

*- Program on effective use of barren land and denuded hills, employment creation, poverty reduction, resettlement and cultivation stabilization.*

**c. Fishery sector**

*- Scientific reports related to policies, new technologies on natural resources protection, new breeds production and selection, fishery exploitation, etc.;*

*- Identify appropriate aquacultural breeds and seasons that are suitable with climate conditions of each ecological zones to increase productivity and effectiveness; appropriately use and exploit water sources so as to have sufficient water for aquacultural production areas;*

*- Apply bio-technologies in aquacultural production, advanced technologies in breeds production to reduce negative impacts from climate change.*

**d. Water resources sector**

*- Study, survey and assessment reports on current status of the existing hydraulic structures and climate change response capacity;*

*- New standards and modernization of hydraulic structures, new technical standards in hydraulic structure planning and design under climate change context;*

*- Irrigation measures with special attention to water saving techniques (surface irrigation, sprinkler irrigation...), procedures on management, hydraulic structures operation and regulation to avoid negative impacts and risks derived from climate change;*

*- Appropriate science technology measures as river basin plan and review; changing technical standards of water exploitation and use, measures on water saving and appropriate utilization, water sources protection and maintenance, water pollution control; drainage, salinity intrusion prevention, structure design and safe implementation standards.*

**e. Salt sector**

*- Reports on review, supplement salt production development plan under the context of climate change and sea level rise;*

*- Properly organize cooperation on salt production to undertake community based management and co-management to minimize negative impacts of unusual and changeable weather phenomenon derived from climate change;*

*- Structural measures, supporting facilities in salt sector include: embankment, pumping stations, sluices, sea water supply canals, drainage systems for both transportation and on-farm structures; implement policies in accordance with Decision No.161/QĐ-TTg dated 05/02/2007 of the Prime Minister ratifying salt production development plan to 2010 and 2020;*

- *New technologies in salt production under the context of climate change.*

#### ***f. Rural development sector***

- *Reports assessing current status of agriculture and rural infrastructure and climate change response capacity;*
- *Rural infrastructure structural (new construction/upgradation) and non structural measures on climate change response for individual periods and to be in line with the new rural development strategy;*
- *Reports analyzing economic, financial, social and environmental feasibilities of programs/projects;*
- *Feasibility studies, design and implementation of approved programs/projects.*

### **Duty 3: Improvement of awareness, responsibilities and participation of various sectors, levels, localities and communities**

#### ***A. Objective***

Improve awareness for the entire sector to understand and undertake measures to respond to climate change and sea level rise.

#### ***B. Contents***

- i) Develop materials and documents to disseminate information on climate change and its impacts on different target groups at different extents;
- ii) Develop plan to disseminate and improve awareness in the sector (central and local level), for different thematic aspects, communities and mountainous areas;
- iii) Establish and train communication officers, improve awareness at sector, thematic aspect and local level;
- iv) Organize workshops, training and thematic conferences;
- v) Strengthen information provision, forecast, clarify climate change issues and contents of the action plan on climate change response from agriculture and rural development sector for period 2011 – 2015 and vision to 2050 on webpage and mass media means;
- vi) Improve awareness of communities, take initiatives in climate change adaptation and mitigation activities, prevent and overcome consequences of natural disasters and reduce negative impacts derived from climate change.

#### ***C. Key outputs***

- Scientific documents, reports on climate change and its impacts on different sub-sectors;
- Training and awareness raising courses on climate change for the sector and communities from central to local level;
- Climate change information published on webpage and mass media means.

***Duty 4: Training and development of human resources for the sector, sub-sectors and localities to meet climate change challenges and create development opportunities***

***A. Objective***

Develop capable human resources with sound knowledge on impacts of climate changes and sea level rise on various aspects of the sector and response measures.

***B. Contents***

- i) Develop training curriculum and program for human resources of the sector and localities on climate change and response to climate change, sea level rise;
- ii) Select staff from management agencies of the sector and localities for the sector climate change capacity building program;
- iii) Nominate selected staff to participate in climate change intensive training programs (including master and doctor study);
- iv) Develop curriculum, integrate climate change knowledge into training curriculum of training institutions for the sector, different aspects and localities.
- v) Create favorable conditions for senior management officers of sector and localities to participate in climate change thematic activities at regional and international level (workshops, short-term training courses, regional and international conferences related to climate change);

***C. Key outputs***

- Technical training curriculum and materials on climate change;
- Training programs (inside and outside Vietnam) for national and local staff engaged in climate change;
- International cooperation programs on climate change training for professional staff of different aspects.

***Duty 5: Integration of climate change and sea level rise in action plan, policies, strategy, projection and development plan of the sector and localities.***

***A. Objective***

Integrate climate change related issues into policy systems, development strategy (projection and plan) of the sector and localities.

***B. Contents***

- i) Develop, promulgate legal documents and guidance on integration of climate change related issues in action plans, policies, development strategy (projection, plan) of different aspects, sector and localities;

- ii) Organize integration of climate change related issues in action plans, policies, development strategy, projection and plan to be in line with the sector action plan on climate change response and national action plan on climate change response at various levels and localities;
- iii) Evaluate results on integration of climate change issues in different sectors, aspects and localities.

### ***C. Key outputs***

- Guiding documents on integration of climate change action plan of the agriculture and rural development sector in action plan, projection of different aspects in the sector at nationwide;

- Action plans, policies, strategies, projections, plans are integrated for implementation.

***Duty 6: International cooperation with governments and international organizations to mobilize resources, expertise, experiences and fund for implementation of the sector action plan on climate change response.***

### ***A. Objective***

Mobilize support resources from international communities to promote implementation of action plan with special focus on financial and technical support from bilateral, multilateral partners, global funds and international non-governmental organizations.

### ***B. Contents***

- i) Strengthen participation of regional and international activities on climate change;
- ii) Participate in international science-technology studies related to climate change, exchange information and experiences on climate change with other countries and international organizations;
- iii) Develop human resources, improve professional qualification and international negotiation skills for staff engaged in climate change of MARD, sectors and localities via national and international training courses;
- iv) Develop climate change program/project proposals to call for support from international organizations;
- v) Cooperate with ministries: Ministry of Planning and Investment, Ministry of Finance, Ministry of Natural Resources and Environment to seek for grants, loans for implementation of programs, projects on climate change and other projects with climate change contents;

- vi) Develop plan on aids mobilization and use from multilateral funds, climate change response fund pledged by international organizations and bilateral aids from developed countries.

**C: Key outputs**

- Climate change program/project proposals to call for international support;
- Assistance commitments from international organizations on implementation of climate change response programs/projects.

**Duty 7: Monitoring, supervision and evaluation** of the action plan implementation

**A. Objective**

Ensure implementation of the action plan on climate change response in accordance with the set progress; withdraw experiences and propose recommendations for improvement of the plan development and implementation for coming periods.

**B. Contents**

- Develop and organize monitoring and evaluation for implementation of the objectives and tasks set in the action plan;
- Supplement and adjust action plan to ensure compliance of the set objectives and progress.

**C. Key outputs**

- Monitoring and evaluation reports of each activity;
- Review meetings, workshops for lesson learnt on action plan implementation; reward, review and disseminate for scaling up.

**Remarks:**

+ *These tasks are organized for implementation in accordance with 6 aspects and 7 ecological zones:*

- *Aspects: Agriculture and food security; Forestry; Fishery; Water resources; Salt production; Rural development;*

- *Ecological zone: North-west; North-east; Red river delta; Central north; Central south; Central highland; Southern.*

+ *Total estimated budget for implementation of these 7 tasks is 72,402 bil. vnd, of which:*

- *Tasks: 402 billion vnd*

- *Investment projects: 72,000 billion vnd.*

+ *Implementing agencies: Standing office of the Steering Committee on climate change response; agencies under MARD, DARD, provinces, cities and other relevant organizations, individuals, etc.*

### **3. SUPPORT MEASURES FOR IMPLEMENTATION OF THE ACTION PLAN ON CLIMATE CHANGE RESPONSE IN AGRICULTURE AND RURAL DEVELOPMENT SECTOR FOR 2011-2015**

#### **3.1 Policy, mechanism**

- Review, revise, supplement and complete legal document system and policy mechanism to create enabling environment for effective implementation of climate change response action plan;
- Undertake policy mechanisms to attract national and international resources for effective implementation of climate change response action plan;
- Encourage organizations, individuals to participate in consultancy and services provision to support climate change response related activities; focus on inter-sectoral cooperation and promote participation and role of local people.

#### **3.2 Organizations**

- Develop, strengthen capacity for network on climate change response from central to local level of the agriculture and rural development sector;
- Define explicit tasks and responsibilities of relevant agencies under MARD on implementation of climate change response action plan.

#### **3.3 Finance**

- Increase fund for implementation of the action plan on climate change response;
- Take initiatives to look for, attract, receive and efficiently use of financial aids and experiences from international organizations during implementation of the sector action plan on climate change response;
- Diversify aids from various international organizations, companies, individuals via bilateral and multilateral activities.

#### **3.4 Other measures**

- Train human resources, experts, particularly leading scientists and capable management officers on climate change mitigation and response;
- Strengthen study and application of advanced science, technologies in climate change mitigation and response;
- Promote cooperation with various ministries, research institutes, vocational associations and localities on action plan implementation;
- Enhance activities related to guidance, periodical monitoring and evaluation of the objectives, tasks, progress and outputs set in the action plan.

### **4. IMPLEMENTATION ARRANGEMENT**

4.1. The Steering Committee of the Action Program on climate change response in agriculture and rural development sector is responsible for steering relevant agencies to implement the sector action plan on climate change response.

4.2. The standing office of the Steering Committee of the Action Program on climate change response in agriculture and rural development sector (standing office of climate change steering committee) undertake the following tasks:

- Synthesize annual plan and coordinate activities;
- Guide, check, monitor, supervise, synthesize and report to MARD on development and implementation of action plan.

4.3. Department of Science, Technology and Environment takes a leading role to cooperate with relevant agencies for implementation of the following contents:

- Submit MARD to approve fund from state budget and other sources for implementation of the action plan;
- Organize appraisal and approval of the action plan outline and tasks.

4.4. International Cooperation Department takes initiative to look for international cooperation opportunities to attract investment, financial and technical assistance, capacity building, etc., for action plan implementation; cooperate with the standing office of the steering committee on climate change response to participate in forums, workshops, bilateral and multilateral cooperation negotiations related to climate change and within MARD's mandates.

4.5. Department of Planning and Finance takes leading role and cooperate with relevant agencies to develop plan and allocate resources for implementation of climate change response related activities.

4.6. Agencies under MARD, DARD and other relevant agencies, on the basis of MARD's action plan, undertake the following tasks:

- Develop, approve and organize implementation of detailed action plan and report to MARD;
- Propose and submit annual work plan to Department of Science, Technology and Environment (Standing Office of the Steering Committee on climate change response) before June 30;
- Prepare and submit annual progress implementation report before December 12 and upon request.

**MINISTER**

(signed)

**Cao Đức Phát**

**ANNEX 1: LIST OF TASKS UNDER CLIMATE CHANGE ACTION PLAN OF  
AGRICULTURAL AND RURAL DEVELOPMENT SECTOR**

**FOR THE PERIOD 2011-2015**

(Attached to the Decision No. 543 /QD-BNN-KHCN dated 23<sup>rd</sup> March, 2011 by MARD)

No	Tasks	Description	Objective	Products	Total fund (million dong)	Time	Implement ing agency
<b>I</b>	<b>Impact Assessment of climate change and sea level rise</b>				<b>109.000</b>		
1.	Study and assess the vulnerability to climate change in agriculture and rural development, serving a basis for policy and development effective supports to the climate change-prone areas	<ul style="list-style-type: none"> <li>- Develop database and CC-prone area mapping</li> <li>- Develop measures and interventions to mitigate the vulnerability and enhance the capacity of climate change adaptation in 7 regions</li> </ul>	<ul style="list-style-type: none"> <li>- Assess, select evaluation methods and criteria for the vulnerability to the climate change in the agriculture and rural development sector;</li> <li>- Assess the vulnerability to climate change in agriculture and rural development in 7 ecological regions;</li> <li>- Propose policies and support activities and interventions with aims to relieve the vulnerability and enhance the capacity of climate change adaptation in such regions</li> </ul>	<ul style="list-style-type: none"> <li>- Methods, set of criteria and indicators for the vulnerability to climate change in the agriculture and rural development sector;</li> <li>- Review reports on medium scenario of the vulnerability to climate change in agriculture and rural development in 7 ecological regions;</li> <li>- Policies and support activities related to the vulnerability to climate change in agriculture and rural development sector in respective ecological zones</li> </ul>	3.000	2010-2012	Selection
2.	Study and assess impacts, identify adaptation solutions, develop and implement climate change adaptation action plans in agriculture and rural development in 7	<ul style="list-style-type: none"> <li>- Develop methods, set of indicators for climate change impact assessment of different spheres;</li> <li>- Assess forms of climate change impacts and influence;</li> <li>- Propose solutions and</li> </ul>	<ul style="list-style-type: none"> <li>- Define methods and set of indicators for assessing CC impacts on rural areas and agricultural production;</li> <li>- Assess climate change influence and impacts on agricultural production and rural development;</li> <li>- Propose solutions and</li> </ul>	<ul style="list-style-type: none"> <li>- Methods, a set of indicators for assessing climate change impacts on agriculture and rural development;</li> <li>- Impact assessment report (current situation and potentials) on climate change in agriculture and rural development in</li> </ul>	13.000	2010-2012	Selection

	ecological zones	develop work plan for sustainable and climate change-adaptable agriculture and rural development.	develop work plan for sustainable agricultural and rural development and climate change adaptation;	Vietnam in 7 ecological zones; - Measures in CC adaptation and implementation of the action plan for the agriculture and rural development sector; - Agriculture and rural development project proposal under climate change context			
3.	Study and propose solutions to establish sea embankment system, water control system crossing big rivers and transport routes, coastal transport bridges and assessment of impacts of water control schemes and sustainable coastal area development ranging from Quang Ninh to Kien Giang	<ul style="list-style-type: none"> <li>- Study, propose appropriate planning in combination with sea embankment system, water control schemes and coastal transport routes;</li> <li>- Study, propose technical solutions as well as combination between water control scheme and transport bridges crossing big rivers; ;</li> <li>- Assess the impact of water control system on socio-economic and environmental conditions;</li> </ul>	<ul style="list-style-type: none"> <li>- Propose appropriate planning approaches in combination with sea embankment system, water control schemes and coastal transport routes;</li> <li>- Propose technical solutions as well as combination between water control scheme and transport bridges crossing big rivers;</li> <li>- Assess the impact of water control system on socio-economic and environmental conditions;</li> </ul>	<ul style="list-style-type: none"> <li>- Relevant planning approaches in combination with sea embankment system, water control schemes and coastal transport routes</li> <li>- Technical solutions as well as combination between water control scheme and transport bridges;</li> <li>- the impact of water control system on socio-economic and environmental conditions</li> <li>- Proposed solutions to mitigating negative impacts of water control system on the sustainable development ;</li> <li>- Technical guidelines on combined water control system and transport bridges</li> </ul>	12.000	2011-2014	Selection
4.	Study, develop and apply an econometric	- Develop an econometric model to	Develop an econometric model to assess socio-	- An econometric model to assess socio-economic and	5.000	2011 -	Selection

	<p>model to assess socio-economic and environmental impacts of climate change on coastal agricultural production</p>	<p>assess socio-economic and environmental impacts of climate change on coastal agricultural production</p> <ul style="list-style-type: none"> <li>- Develop an report to assess socio-economic and environmental impacts of climate change on agricultural production in the Red Delta with the quantified criteria;</li> <li>- Develop solutions and proposals on impact mitigation.</li> </ul>	<p>economic and environmental impacts of climate change on agricultural production and application of this model to the Red Delta, and then proposal on impact mitigation measures</p>	<p>environmental impacts of climate change on agricultural production;</p> <ul style="list-style-type: none"> <li>- Socio-economic and environmental CC impact assessment report on the Red Delta with the quantified criteria</li> <li>- Proposed measures in impact mitigation</li> </ul>	2013	
5.	<p>Study, develop tools and models to assess water resource developments in catchments affected by climate change and propose proper use and exploitation solutions</p>	<ul style="list-style-type: none"> <li>- Establish numerical tools and models to gauge hydraulic power and hydrograph for different regions and river basins;</li> <li>- Develop a report on assessing water resource developments in some river basins affected by climate change</li> <li>- Seek solutions to proper use and exploitation of water resource in river basins.</li> </ul>	<ul style="list-style-type: none"> <li>- Develop and apply numerical tools and models to gauge hydraulic power and hydrograph for different regions and river basins;</li> <li>- Assess quantitative and qualitative water resource developments in some major river basins affected by climate change;</li> <li>- Propose solutions to proper use and exploitation of water resource to ensure the sustainable river basin development.</li> </ul>	<ul style="list-style-type: none"> <li>- Report on assessing water resource developments in some river basins affected by climate change;</li> <li>- Solutions to proper use and exploitation of water resource in river basins</li> </ul>	2011-2014	8.000
6.	<p>Study scenarios of CC impact on the</p>	<ul style="list-style-type: none"> <li>- Develop scenarios of CC impact on the</li> </ul>	<ul style="list-style-type: none"> <li>- Forecast climate change impacts on the operational</li> </ul>	<ul style="list-style-type: none"> <li>- Forecast climate change impacts on the operational</li> </ul>	2012-2014	10.000

	operational mechanism of water irrigation, drainage and supply schemes and propose solutions to planning and upgrading such water schemes	operational mechanism of water irrigation, drainage and supply schemes - Solutions to planning and upgrading such schemes.	mechanism of water irrigation, drainage and supply schemes; - Propose solutions to planning and upgrading the scheme system.	mechanism of water irrigation, drainage and supply schemes; - Solutions to planning and upgrading the scheme system			
7.	Study scenarios of sea-rising level impacts on salinity intrusion, sea and river embankment systems and propose solutions to planning and upgrading the systems;	- develop scenarios of sea-rising level impacts on salinity intrusion, sea and river embankment systems - develop solutions to planning and upgrading the systems;	- Define scenarios of sea-rising level impacts on salinity intrusion, sea and river embankment systems - Propose solutions to planning and upgrading the systems	- scenarios of sea-rising level impacts on salinity intrusion, sea and river embankment systems - solutions to planning and upgrading the systems	6.000	2010-2012	Selection
8.	Study CC impacts on safety and efficiency of reservoirs and propose CC suppression measures.	- Study, assess CC impacts on the operational mechanism of reservoirs; - Collect data and define arguments for CC adaptation and mitigation solutions; - Develop processes, technologies for some major adaptation and mitigation solutions	- assess CC impacts on the operational mechanism of reservoirs - define arguments for CC adaptation and mitigation solutions - Develop processes, technologies for some major adaptation and mitigation solutions	- Report on CC impacts on the safe and efficient operational mechanism of reservoirs - Scientific background for CC adaptation and mitigation solutions to ensure the safe and efficient operation of reservoirs - Guideline on assessing CC impacts on the safe and efficient operation of reservoirs; - Processes, technologies for some major solutions - Application of processes, technologies to a specific reservoirs in the Central	3.000	2011-2013	Selection

				Region				
9.	Study scenarios of CC impacts on biodiversity, forest ecosystems and wetlands and propose CC adaptation measures	- Develop scenarios of CC impacts on biodiversity, forest ecosystems and wetlands; - Develop CC adaptation measures	- Forecast CC impacts on biodiversity, forest ecosystems and wetlands; - Propose CC adaptation measures.	- scenarios of CC impacts on biodiversity, forest ecosystems and wetlands; - CC adaptation measures	5.000	2012-2015	Selection	
10.	Study, select high drought and disease-resistant forest seedlings adaptable to CC.	- Make a list of drought-resistant species suitable for different ecological zones; - Develop guideline on how to recognize suitable species, species features and planting techniques of some high economic value drought-resistant species	Select a group of drought-resistant species having a water-reserving function and high economic efficiency as well as being suitable for different climate and soil conditions.	- List of drought-resistant species suitable for different ecological zones - Guideline on how to recognize suitable species, species features and planting techniques of some high economic value drought-resistant species;	5.000	2012 - 2014	Selection	
11.	Study, assess biomass and carbon baseline study of different forest types and forest land in forest ecological areas.	Assess biomass and develop carbon baseline of different forest types and forest land in forest ecological areas.	Assess biomass and develop carbon baseline of different forest types and forest land in forest ecological areas;	Carbon baseline of different forest types and forest land in forest ecological areas	4.000	2012 - 2014	Selection	
12.	Study CC impacts on aquaculture area, marine productivity, production and propose marine resource	- Define CC impacts on aquaculture area, marine productivity, production and resources in a specific selected research area;	- Assess CC impacts on aquaculture area, marine productivity, production and resources; - Propose marine resource conservation and adaptation	- impacts on aquaculture area, marine productivity, production and resources in a specific selected research area; - marine resource	6.000	2012-2015	Selection	

	conservation and adaptation solutions	- Develop marine conservation and adaptation solutions.	solutions	conservation and adaptation solutions			
13.	Study, assess CC impacts on local people's livelihood in the areas affected by natural disasters and sea-rising areas (7 ecological zones) and propose solutions to diversification and building capacity of CC adaptation and mitigation	- Develop a report on CC impacts on local people's livelihood in the areas sensitive to climate change; - Determine solutions to livelihood and diversification and building capacity of CC adaptation and mitigation of impacts on people's life	- Assess CC impacts (natural disasters, higher temperature, salinity intrusion, natural resource degradation, sea level rising...), affecting local people's livelihoods in different areas; - Propose solutions to livelihood diversification and building capacity of CC adaptation for communities to control climate risks;	- Report on CC impacts on local people's livelihoods in CC sensitive areas - Solutions to livelihood diversification and building capacity of CC adaptation and mitigation of climate risks affecting on people's life.	10.000	2011 - 2014	Selection
14.	Study and forecast CC impacts on clean water supply and rural environmental sanitation and foresee adaptation solutions	- Develop a report on analysis and assessment of CC impacts on water supply and rural sanitation in the areas affected by CC; - Determine solutions to mitigating CC impacts on water supply and rural sanitation.	- Forecast CC impacts on water supply and rural sanitation; - Propose CC adaptation and mitigation solutions	- A report on analysis and assessment of CC impacts on water supply and rural sanitation in the areas affected by CC; - Determine solutions to mitigating CC impacts on water supply and rural sanitation.	4.000	2011-2013	Selection
15.	Develop and implement some pilot sector-oriented models/projects for CC adaptation and mitigation	- Define solutions; - Implement pilot sector-oriented models for CC adaptation and emission reduction	Develop and implement some pilot sector-oriented models/projects for CC adaptation and emission reduction.	Sector-oriented models for CC adaptation and emission reduction.	10.000	2012-2015	Selection

16.	Develop CC database, define CC impacts on agriculture, forestry, fisheries, irrigation & rural development	Collect and incorporate CC data and develop CC database, CC impacts on agriculture, forestry, fisheries & rural development.	Develop and manage CC database (impacts and solutions) on agriculture, forestry, irrigation, salt production, fisheries and rural development.	- Scientific background for selecting data parameters for certain sectors; - Data and information according to the data parameters selected for certain sectors; - Softwares for CC data management and updating (impacts and solutions) applicable to such certain sectors as agriculture, forestry, irrigation, salt production, fisheries and rural development.	5.000	2011-2015	Selection
<b>II</b>	<b>Sector-oriented project/program development suitable for specific local conditions for the purpose of CC response (mitigation and adaptation) and sector development</b>				<b>72.000</b>		
17.	Review, adjust coastal watershed protection forest planning, and protection development with aims to enhance the adaptation to climate change and the rising sea level.	- Develop a report on CC current situation and scenarios of CC impacts on coastal protection forests; - Define solutions to coastal protection and development to enhance the adaptation to climate change and the rising sea level.	- Assess current situation and forecast CC impacts on coastal protection forests; - Propose solutions to coastal protection forest planning, protection and development to enhance the adaptation to climate change and the rising sea level.	- Report on CC current situation and scenarios of CC impacts on coastal protection forests - Solutions to solutions to planning, protection and development of coastal protection forests to enhance the adaptation to climate change and the rising sea level;	5.000	2011 - 2014	Selection
18.	Study, review, adjust the Irrigation master planning for the Red Delta, coastal areas and Mekong delta	- Study scientific background for calculating hydraulic and hydrographical changes, salinity	Provide results of hydraulic and hydrographic changes, and salinity intrusion in riverine and coastal areas to make the planning for	- Scenario of some fundamental changes in hydraulic and hydrographic conditions - Scenario of salinity	5.000	2011-2015	Selection

	under the context of climate change and the rising sea level.	intrusion and drainage of riverine and coastal areas under the context of climate change and the sea-level rising - Calculate major parameters of hydraulics and hydrograph to serve the master planning for different coastal areas.	different areas	intrusion of major riverine areas; - Impacts of the sea-level rising on the flood drainage capacity			
19.	Review, adjust the planning for agriculture and rural development under the context of climate change in the red delta, Mekong delta, Southeast region, Northern Central Region, Southern Central Region	- Study scientific basis as an input for the Planning - Seek solutions to planning for agriculture and rural development under the context of climate change in the red delta, Mekong delta, Southeast region, Northern Central Region, Southern Central Region	Review, adjust the planning for agriculture and rural development under the context of climate change in the red delta, Mekong delta, Southeast region, Northern Central Region, Southern Central Region	Agriculture and rural planning under the context of climate change in the red delta, Mekong delta, Southeast region, Northern Central Region, Southern Central Region	5.000	2011 -2015	Selection
20.	Review the planning for irrigation, flood embankment, flood control, climate change adaptation systems	- Collect existing planning schemes; - study proposed planning schemes	Review the planning for irrigation, embankment, flood control, climate change adaptation systems	Planning scheme for irrigation, embankment, flood control, systems.	10.000	Every 5 years	Selection
21.	Develop technical standards, norms applicable to different spheres of the agriculture and rural	Develop technical norms, standards for cultivation, animal husbandry, forestry, fisheries, irrigation	Develop technical norms, standards for cultivation, animal husbandry, forestry, fisheries, irrigation under context of climate change	Technical norms, standards for cultivation, animal husbandry, forestry, fisheries, irrigation under context of climate change	4.000	2010 - 2015	Selection

	development sectors under context of climate change	under context of climate change	Select and create new varieties adaptable to CC adversely-affected areas.	programs for selection and experiment of new varieties adaptable to CC adversely-affected areas	6.000	2012-2014	Selection
22.	Develop programs for selection and experiment of new varieties adaptable to CC adversely-affected areas.	Study and develop programs for selection and experiment of new varieties adaptable to CC adversely-affected areas.	Select and create new varieties adaptable to CC adversely-affected areas.	programs for selection and experiment of new varieties adaptable to CC adversely-affected areas	6.000	2012-2014	Selection
23.	Apply new technologies and materials to irrigation and embankment schemes to mitigate adverse impacts of climate change and the sea level rising	Apply new technologies and materials to irrigation and embankment schemes to mitigate adverse impacts of climate change and the sea level rising	Propose and introduce new suitable and highly efficient technologies and materials to construction and upgradation of irrigation schemes and dykes to mitigate impacts of climate changes and the sea level rising	New technologies and materials for irrigation and embankment schemes to mitigate adverse impacts of climate change and the sea level rising	8.000	2013-2015	Selection
24.	Conserve rare and precious species, especially species less adaptable to environmental conditions for aquaculture;	- Develop rare and precious species with high economic and nutrient values - Develop measures in conserving rare and precious species under the context of climate change	- Seek rare and precious species with high economic and nutrient values; - Propose measures in conserving rare and precious species under the context of climate change.	- rare and precious species with high economic and nutrient values; - Measures in conserving rare and precious species under the context of climate change.	6.000	2012-2015	Selection
25.	Study and develop water supply and sanitation technologies suitable for the areas frequently affected by natural disasters such as floods, droughts,	- Develop water supply and environmental sanitation technologies suitable for the areas affected by climate change - Organize training courses in applying	- Select and apply water supply and sanitation technologies as a pilot to the areas affected by climate change (storms, floods, droughts, salinity intrusion) - Organize training courses and guide local people how to	- water supply and environmental sanitation technologies suitable for the areas affected by climate change; - Local people trained in applying technologies to developing, managing and	6.000	2012-2014	Selection

	salinity intrusion etc...	technologies to developing, managing and operating new technologies suitable for local conditions.	use proper technologies, ensure water supply and environmental sanitation under context of climate change.	operating new technologies suitable for local conditions			
26.	Establish, manage, protect, develop and use 16.24 million ha land planned for forest development in a sustainable manner, increasing the forest cover to 42-43% in 2010 and 47% by 2020	Establish, manage, protect, develop and use 16.24 million ha land for forest planning in a sustainable manner, increasing the forest cover to 42-43% in 2010 and 47% by 2020.	Introduce the approach to sustainable management, protection, development and use of 16.24 million ha land for forest planning, increasing the forest cover to 42-43% in 2010 and 47% by 2020.	16.24 million ha land for forest planning established, managed, protected, developed and used in a sustainable way; and the forest cover of 42-43% attained in and 47% by 2020.	7.000	2011-2015	Selection
27.	Develop sector-oriented policy and planning programs or/and projects for the period 2011 - 2015 under context of climate change	Develop sector-oriented policy and planning programs or/and projects for the period 2011 - 2015 under context of climate change.	Develop sector-oriented policy and planning programs or/and projects for the period 2011 - 2015 under context of climate change	Sector-oriented policy and planning programs or/and projects for the period 2011 - 2015 under context of climate change	10.000	2011-2015	Selection
<b>III</b>	<b>Raising awareness and responsibility of different sectors, provinces and communities</b>						
28.	Raise awareness of officials, public employees working for the sector as well as communities about CC adaptation and mitigation	Disseminate and thoroughly inform of State and sector policies and viewpoints for officials, public employees and communities about activities rated to CC adaptation and mitigation.	Raise awareness of officials, public employees working for the sector as well as communities about activities to CC adaptation and mitigation	- Programs, documents, information on natural disasters, CC adaptation - Dissemination events organized for officials, public employees and communities	10.000	Every year	Selection
29.	Training and advanced training programs;	- Develop training programs;	Organize training and refresh training courses in natural	Training and refresh training courses in natural disasters	5.000	Every year	Selection

	courses in natural disasters and CC adaptation for communities who are often burdened with natural disasters.	- Refresh training; - Training.	disasters and CC adaptation for Communities who often face up natural disasters.	and CC adaptation for Communities who often face up natural disasters.		
30.	Develop models which enable communities to take initiative in disaster control, mitigation and CC adaptation”	- Develop pilot models which enable communities to take initiative in disaster control, mitigation and CC adaptation - Develop a guideline how to share experiences, upscale models in the areas affected by climate change	Propose and develop pilot models that enable communities to take initiative in natural disaster control, mitigation and CC adaptation Propose the upscaling effective models in the areas affected by climate change	pilot models that enable communities to take initiative in natural disaster control, mitigation and CC adaptation A guideline how to share experiences, upscale models in the areas affected by climate change	8,000	2011 - 2015 Selection
31.	- Develop insurance policy on climate risks given to agriculture and credit policy targeted at poor communities in the areas affected by climate change	- Develop insurance policy on climate risks to arise to agriculture and credit policy targeted at poor communities in the areas affected by climate change	- Propose to develop insurance policy on climate risks occurred to agriculture and credit policy targeted at poor communities in the areas affected by climate change	insurance policy on climate risks occurred to agriculture and credit policy targeted at poor communities in the areas affected by climate change	4,000	2011-2013 Selection
<b>IV</b>	<b>Human resource development opportunities</b>				<b>43,000</b>	
32.	Develop training program; organize training courses for human resources for scientific research, management of CC impact mitigation and	- Develop training program in CC adaptation and mitigation for officials and communities working for such different sectors as	- Develop training program in CC adaptation and mitigation for officials and communities working for such different sectors as agriculture, irrigation, fisheries, salt production, forestry and rural	- A report on analysis and assessment of awareness and knowledge of communities and officials working for the agriculture and rural development; - Training needs assessment	15,000	2011-2015 Selection

	adaptation;	agriculture, irrigation, salt fisheries, forestry production, and rural infrastructure; - Develop training plan and modules; and organize training courses accordingly	infrastructure;; - Develop training plan and modules; and organize training courses accordingly	report - Training program and modules for			
33.	Consolidate institutional arrangements with steering and commanding functions, including infrastructural improvement with aims to disaster control, mitigation and climate change adaptation	Develop and consolidate institutional arrangements with steering and commanding functions over disaster control, mitigation and climate change adaptation	- Consolidate institutional arrangements with steering and commanding functions over disaster control, mitigation and climate change adaptation - Enhance technical premises and infrastructure for disaster control and mitigation	- institutional arrangements with steering and commanding functions over disaster control, mitigation and climate change adaptation. - technical premises and infrastructure for disaster control and mitigation	5.000	Every year	Steering Committee for National Flood Control
34.	Formulate a policy on socialized dyke management, disaster control and CC adaptation	Formulate a policy on socialized dyke management, disaster control and CC adaptation	Formulate a policy on socialized dyke management, disaster control and CC adaptation	a policy on socialized dyke management, disaster control and CC adaptation	3.000	2011-2013	Directorate of Water Resources
35.	Develop and improve gauging stations which perform overarching functions over monitoring the climate change	improve gauging stations which perform overarching functions over monitoring the climate change	Develop and improve gauging stations which perform overarching functions over monitoring the climate change	gauging stations which perform functions over monitoring the climate change	20.000	Every year	Selection
<b>V</b>	<b>Integration of climate change and the sea level rise into action plans, policies, strategies, planning, plans for sector/sub-sector and provincial development</b>						
36.	Review existing legal instruments and	Review existing legal instruments and	Obtain a system of legal instruments, laws and policies	Recommendations on amendment,	10.000	2011-2015	Legislation Dept

	<p>policies, and then recommend amendment, supplementation and promulgation of legal documents related to CC mitigation and adaptation which are still missing.</p>	<p>policies, recommend amendment, supplementation and promulgation of legal documents related to CC mitigation and adaptation which are still missing</p>	<p>in consistent with adaptation</p>	<p>supplementation and promulgation of legal documents related to CC mitigation and adaptation which are still missing</p>			
37.	<p>Develop incentive policies to support the areas frequently affected by natural disasters as well as insurance policy against disasters.</p>	<p>Develop incentive policies to support the areas frequently affected by natural disasters as well as insurance policy against disasters.</p>	<p>Attain incentive policies to support the areas frequently affected by natural disasters as well as insurance policy against disasters.</p>	<p>- policies to support the areas frequently affected by natural disasters as well as insurance policy against disasters; - Insurance policy against disasters.</p>	6,000	2012-2014	Directorate of Water Resource
38.	<p>Formulate incentive policies on crop restructuring under the context of climate change in agricultural-based ecological areas.</p>	<p>- Study scientific background and practical experiences to develop incentive policies on crop restructuring under CC context. - Develop a crop restructuring model in 7 ecological regions; - Develop, disseminate policies on crop restructuring caused by CC impacts on agriculture-based ecological regions.</p>	<p>Have incentive policies on crop restructuring under the context of climate change in agricultural-based ecological areas.</p>	<p>Incentive policies on crop restructuring under the context of climate change in agricultural-based ecological areas.</p>	6,000	2012-2015	Directorate of Cultivation
39.	<p>Develop policy on sustainable</p>	<p>Develop policy on sustainable</p>	<p>Develop policy on sustainable management, protection,</p>	<p>Policy on sustainable management, protection,</p>	10,000	2012-2014	Directorate of Forestry

	management, protection, development and use of natural resources and forest land.	management, protection, development and use of forest resources and forest land.	development and use of forest resources and forest land.	development and use of forest resources and forest land.			
40.	Develop policies on sustainable management and development of salt production adaptable to climate change	Develop policies on sustainable management and development of salt production adaptable to climate change.	Have policies on sustainable management and development of salt production adaptable to climate change	policies on sustainable management and development of salt production	6,000	2011-2013	Dept. of Agro Processing & salt production
41.	Develop and implement the project for reducing emission and mitigating greenhouse effects on agriculture in Vietnam by 2020	Assess current situation of production, and scenario of level and developments of greenhouse emission from agricultural production areas from now to 2020; - Define potential solutions to greenhouse emission control for upscale; - Propose specific policies, programs, projects to promote potential solutions to reducing 20% emission by the year 2020.	Speed up green agricultural production which reduces emissions and contributes to national food security and poverty reduction; - Keep the sector growth rate of 20%, and reduce the poverty rate by 20% and reduce greenhouse emissions by 20% for every period of 10 years	Major sources of emissions and level of emissions from agricultural production to be assessed - Potential reductions in greenhouse emissions from agricultural production to be assessed - The master planning for crop and animal structure by 2020 to be reviewed - Optimal options to reduce emissions by 2020 to be defined - Incentive policies on application of solutions to greenhouse emission reduction as well as implementing arrangement solutions.	30,000	2011-2015	Department of Science, Technology and Environment
42.	Study the proposal to develop technical procedures for	Develop technical procedures for farming cultivation, use of fertilizers	Develop technical procedures for farming cultivation, use of fertilizers	technical procedures for farming cultivation, use of fertilizers and land	6,000	2011-2013	Selection

	farming cultivation, use of fertilizers and land reclamation for major crops in the areas adversely affected by climate change (including the red delta, Mekong delta and central coastal plain).	fertilizers and land reclamation for major crops to mitigate adverse impacts and promote positive impacts in the areas affected by climate change	and land reclamation for major crops to mitigate adverse impacts and promote positive impacts from climate change - Test the aforesaid technical procedures in research areas; - Widely disseminate research procedures for the purpose of CC negative impact mitigation and adaptation.	reclamation for major crops to mitigate adverse impacts and promote positive impacts in the areas affected by climate change.			
43.	Revise, amend and supplement legal documents related to agriculture and rural development with aims to mainstream climate change into the planning and agriculture and rural development	Revise, amend and supplement legal documents related to agriculture and rural development with aims to mainstream climate change into the planning and agriculture and rural development.	Revise, amend and supplement legal documents related to agriculture and rural development with aims to mainstream climate change into the planning and agriculture and rural development;	Legal documents related to agriculture and rural development to be promulgated with aims to mainstream climate change into the planning and agriculture and rural development	5.000	2011 - 2015	Legislation Department
44.	Develop incentive policy on crop restructuring under CC context in agriculture-based ecological areas nation-wide for the period 2011-2015.	Develop incentive policy on crop restructuring under CC context in agriculture-based ecological areas nation-wide for the period 2011-2015.	Develop incentive policy on crop restructuring under CC context in agriculture-based ecological areas nation-wide for the period 2011-2025.	- Incentive policy on crop restructuring under CC context in agriculture-based ecological areas nation-wide for the period 2011-2025 - Implementing arrangements	2.000	2011 - 2015	Directorate of Cultivation
45.	Develop institution and policy on animal husbandry development through greenhouse emission reduction	Develop institution and policy on animal husbandry development through greenhouse emission reduction	Reduce administrative barriers and develop policies and institutions on further development of Vietnam's animal husbandry in a sustainable way and in a way	- the system of institutions and policies on sustainable development and environmental pollution mitigation to be improved - institutions, policies,	10.000	2011-2015	Department of Animal Husbandry

				to minimize environmental pollution	technical guidelines on animal waste management, standards and norms to be finalized - Policies and institutions on private sector participation in animal husbandry development in combination with environmental protection.			
46.	Review and integrate CC and natural disaster control and mitigation and climate change into national development plans and target programs	- Assess CC impacts on natural disaster control and mitigation; - Mainstream natural disaster control and climate change into national development plans and target programs.	Handbook on sustainable forest management and use, including Reduced Impact Logging, eco-tourism development and agro-forestry	Mainstream natural disaster control and mitigation and CC into national development plans and target programs.	Legal document stipulating on the integration of natural disaster control and mitigation and CC into national development plans and target programs.	5.000	2011-2013	Steering Committee for National Flood Control
47.	Develop Handbook on sustainable forest management and use, including Reduced Impact Logging, eco-tourism development and agro-forestry	Handbook on sustainable forest management and use, including Reduced Impact Logging, eco-tourism development and agro-forestry	Handbook on sustainable forest management and use, including Reduced Impact Logging, eco-tourism development and agro-forestry	Develop Handbook on sustainable forest management and use, including Reduced Impact Logging, eco-tourism development and agro-forestry	Handbook on sustainable forest management and use, including Reduced Impact Logging, eco-tourism development and agro-forestry	5.000	2011-2015	Directorate of Forestry
<b>VI</b>	<b>International cooperation with governments and international organizations to mobilize resources, expertise, experiences and fund for implementation of the sector action plan on climate change response.</b>							
48.	Develop information exchange system, bilateral and lateral	Develop information exchange system, bilateral and lateral	Develop information exchange system, bilateral and lateral	Develop information exchange system, bilateral and lateral	information exchange system, bilateral and lateral partnership & sub-projects,	7.000	2011 - 2015	ICD

	partnership & sub-projects, further cooperate with the CC networks	partnership & sub-projects, further cooperate with the CC networks	projects, further cooperate with the CC networks	closer cooperation with the CC networks			
49.	Develop a mechanism to mobilize and use financial aids and establish a fund for implementing the CC adaptation program	Develop a mechanism to mobilize and use financial aids and establish a fund for implementing the CC adaptation program	Develop a mechanism to mobilize and use financial aids and establish a fund for implementing the CC adaptation program	a mechanism to mobilize and use financial aids and establish a fund for implementing the CC adaptation program	8.000	2011-2015	ICD
50.	Establish a self-financing Fund for natural disaster control and mitigation	Establish a self-financing Fund for natural disaster control and mitigation.	Obtain a self-financing Fund for natural disaster control and mitigation	a self-financing Fund for natural disaster control and mitigation	10.000	2011-2015	Directorate of Water Resources
51.	Organize a cooperation platform for natural disaster control and mitigation and CC adaptation	Organize a cooperation platform for natural disaster control and mitigation and CC adaptation	Organize a cooperation platform for natural disaster control and mitigation and CC adaptation	A cooperation platform for natural disaster control and mitigation and CC adaptation	5.000	Every year	Directorate of Water Resources
52.	Make cooperation with national, regional and international organizations in natural disaster mitigation and CC adaptation	Make cooperation with national, regional and international organizations in natural disaster mitigation and CC adaptation	Make cooperation with national, regional and international organizations in natural disaster mitigation and CC adaptation	cooperation with national, regional and international organizations in natural disaster mitigation and CC adaptation	5.000	Every year	Directorate of Water Resources
<b>VII</b>	<b>Monitoring and Evaluation</b>				<b>15.000</b>		
53.	Develop M&E work plan, M&E system for the fulfillment of objectives and tasks of the action plan	Develop M&E work plan, M&E system for the fulfillment of objectives and tasks of the action plan	Develop M&E work plan, M&E system for the fulfillment of objectives and tasks of the action plan	M&E work plan, M&E system for the fulfillment of objectives and tasks of the action plan	5.000	2011-2015	Office of Climate Change Steering Committee
54.	Organize the implementation of the M&E work plan and	Organize the implementation of the M&E work plan and	Implement the M&E work plan and approaches to fulfilling objectives and tasks	- M&E report on specific activities; - Work plan for	10.000	2011-2015	Office of Climate Change

	approaches to fulfilling objectives and tasks of the action plan	approaches to fulfilling objectives and tasks of the action plan	of the action plan in an effective way	supplementing and adjusting the action plan.				Steering Committee
	<b>Total fund:</b> <i>(four hundred and two thousands billion dong)</i>				<b>402.000</b>			

DRAFT

**ANNEX 2: LIST OF PRIORITIZED CLIMATE CHANGE ADAPTATION PROJECTS  
FOR THE PERIOD 2011-2015**

(Attached to the Decision No. 543 /QĐ-BNN-KHCN dated 23<sup>rd</sup> March, 2011 by MARD)

No.	Program/project titles	Location	Time frame	Objectives/Tasks	Est. Budget (billion dong)
<b>I</b>	<b>CAPACITY BUILDING FOR CENTRAL REGION COMMUNITIES IN FLOOD CONTROL FORESTRY</b>	Central Region	5 years	To control over the sea level rising and mitigate natural disasters in such provinces as Ha Tinh, Quang Tri, Thua Thien Hue, Da Nang, Quang Nam, Quang Ngai, Binh Dinh, Phu Yen, Khanh Hoa, Ninh Thuan and Binh Thuan Main activities: 1. Build storm shelters for communities. 2. Support poor households to build their consolidated houses. 3. Further equip rescue facilities	<b>2.000</b>
<b>II</b>					<b>4.000</b>
1	National Program for reforestation and Rehabilitation of mangrove forest and sand break coastal protection forests period 2010 - 2015".	3 Projects for 3 coastal regions of Vietnam	6 years	To protect sea embankment system as well as infrastructure to serve coastal local people's production and life; to enhance biodiversity of the coastal ecosystem; and build capacity of CC adaptation and livelihood improvement.	3.500
2	Reforestation and rehabilitation of watershed protection forests in Northwest Region – Phase 1	Lai Chau, Lao Cai province	5 years	To increase the watershed forest cover, to protect soil, to control floods, to stabilize water supply; to combine between conservation and development; to harmonize socio-economic and environmental benefits, to ensure sustainable development. Phase 1 focuses on 2 provinces, namely Lai Chau and Lao Cai	290
3	Building capacity of forest management and protection and forest fire management in Vietnam	5 provinces	3 years	<ul style="list-style-type: none"> <li>• To finalize legal documents and institution on forest protection; develop mechanism, policy and financial regimes of forest protection and forest fire management</li> <li>• To conserve biodiversity;</li> <li>• To strengthen the law enforcement; enhance capacity of forest management and protection and fire management; disseminate, educate and raise awareness of forest protection and fire management;</li> <li>• To apply science and technology to forest resource management and forest fire management;</li> <li>• To organize training and refresher courses in forest management and protection and fire management and</li> </ul>	210

					<ul style="list-style-type: none"> <li>To equip means and facilities to serve forest protection and management and fire management.</li> </ul>	
<b>III</b>	<b>AGRICULTURE</b>					<b>5.000</b>
1	Measures in greenhouse emission reduction and climate change adaptation in key rice-growing areas in Vietnam.	Provinces	5 years		To support farmers to adopt GAP, the principle of 3 increases and 3 decreases, seasonal rotational cropping etc.; make investment in the secondary irrigation system; to support to use different kinds of new and environment-friendly fertilizers	1.500
2	Sustainable cassava production expansion to supply raw materials for biofuel production for the period 2011-2015.	Provinces	5 years		To develop sustainable cassava production areas attached to biofuel production system, contributing to increasing the efficiency of land use as well as higher crop productivity and higher economic efficiency	1.000
2	Intensive sugar cane production expansion to contribute to biofuel production	Provinces	5 years		To set up a raw material production system attached to ethanol production line, contributing to ensuring energy security, ecological environment and higher living standards for local people.	1.000
4	Development of a national biogas program	Nation-wide	5 years		To improve livelihoods, develop the animal husbandry sector in a sustainable way, provide recyclable energy, reduce greenhouse emissions and develop biogas in a sustainable manner.	1.500
<b>IV</b>	<b>FISHERIES</b>					<b>3.000</b>
	<b>Marine resource exploitation and protection</b>					<b>2.150</b>
1	Development of storm shelters to hide/avoid storms and fishing logistics (including 18 projects).	Coastal provinces	10 years		To enable to welcome 50,000 fishing boats anchoring in case where such phenomenon as tropical low pressure and storms might happen, if any; develop infrastructure for product consumption, offshore fishing; to protect marine resources and guide how to use fishing ground etc...	1.650
2	Development of fishing boat safety projects and appropriate fishing management information system.	28 coastal provinces	5 years		To contribute to improving and modernizing the fishing management information system for managing and monitoring fishing activities effectively and safely	500
	<b>Investment projects for aquaculture Infrastructure</b>					<b>850</b>

1	Infrastructure for centralized aquaculture in Quynh Luu district	Nghe An	3 years	To make investment in infrastructural construction of intensive shrimp-raising areas with high productivity, ensuring sustainable development and anti-inundation	64
2	Infrastructure for lobster-raising cages in Cam Binh	Khanh Hoa	3 years	To establish a centralized and industrial lobster-raising areas with high productivity to generate raw materials for export, combine between development and environmental protection for the purpose of sustainability	11
3	Investment in infrastructure for centralized aquaculture in Hoang Xa	Phu Tho	5 years	To make investment in infrastructure for centralized aquaculture with high productivity and the anti-inundation	115
4	Infrastructure for industrial shrimp-raising areas centralized in Thanh Hoa	Thanh Haa	5 years	To invest in upgrading infrastructure for the industrial shrimp-raising zones in Thanh Hoa province in order to meet the technical requirements for intensive <i>P.vannamiei</i> shrimp production adaptable to climate change.	150
5	Infrastructure for aquaculture centralized in Nghi Xuan	Ha Tinh	5 years	To invest in infrastructure for centralized sustainable aquaculture, water supply and anti-inundation system	150
6	Investment in infrastructure for centralized aquaculture in Thach Phu	Ben Tre	5 years	To develop irrigation system, transport system and technical infrastructure for aquaculture development	150
7	Development of infrastructure for centralized onshore aquaculture in Kien Giang	Kien Giang	3 years	To invest in infrastructure for centralized onshore aquaculture in a sustainable way, with high productivity and climate change adaptability	70
8	Development of infrastructure for centralized onshore aquaculture in Khanh Hoa province	Khanh Hoa	3 years	To invest in infrastructure for centralized onshore aquaculture in a sustainable way, with high productivity and climate change adaptability	70
9	Development of infrastructure for centralized onshore aquaculture in Quang Ninh province	Quang Ninh	3 years	To invest in infrastructure for centralized onshore aquaculture in a sustainable way, with high productivity and climate change adaptability	70
<b>V</b>	<b>FLOOD CONTROL SCHEMES FOR URBAN AREAS AND DENSELY-POPULATED AREAS</b>				<b>25.000</b>
1	Improvement of the water drainage capacity in the	Hanoi	5 years	To drain out and prevent against inundation in the inner city and the west of hanoi, in rural population areas, industrial zones, and to protect agricultural	4.000

	West of hanoi				production activities - Main items: to build Yen Nghia pumping station (120m <sup>3</sup> /s)	
2	Irrigation system against inundation in Ho Chi Minh city.	Ho Chi Minh	5 years		To establish irrigation system against inundation in Ho Chi Minh city, to protect people's life, to serve long-term agriculture and fisheries development, to adapt to climate change - the sea level rising, to meet requirements for environmental protection and sustainable development; to control tide to reduce the tidal level of canals surrounding urban areas with aims to enhance the drainage capacity of the urban drainage system located at the low altitude; to gradually minimize inundation and to rehabilitate environment for these areas. Main activities: 1. Finalize the embankment system of Sai Gon River; 2. Develop large-scale tide-breaking culverts 3. Dredge the water drainage system 4. Develop water-regulating reservoirs	6.000
3	Irrigation system against inundation in other cities such as Hai Phong, Can Tho, Ca Mau and Vinh Long	Hai Phong, Can Tho, Ca Mau and Vinh Long	5 years		Develop a irrigation system for preventing against inundation in Hai Phong, Can Tho, Ca Mau and Vinh Long cities; to protect local people's life, to serve long-term agriculture and fisheries development, to adapt to climate change - the sea level rising, to meet requirements for environmental protection and sustainable development; to control tide to reduce the tidal level of key canals surrounding urban areas with aims to enhance the drainage capacity of the urban drainage system located at the low altitude; to gradually minimize inundation and to rehabilitate environment for these areas. Main activities: 1. Finalize the river embankment system. 2. Establish large-scale tide-breaking culverts 3. Dredge the water drainage system. 4. Develop water-regulating reservoirs	15.000
<b>VI</b>	<b>IMMIGRATION IN NATURAL DISASTER-PRONE AREAS IN 14 PROVINCES</b>	15 projects	5 years		To control natural disasters and ensure sustainable livelihood development.	<b>1.000</b>
<b>VII</b>	<b>RIVER AND SEA EMBANKMENT SYSTEM UPGRADEMENT AND IMPROVEMENT</b>					<b>10.000</b>
1	Investment program for consolidating and upgrading dyke system of Northern region and Northern Central region rivers.	Northern Region + Northern Central Region	5 years		To control and prevent against the sea-level raising and mitigate natural disasters	4.000
2	Investment program for consolidating and upgrading	Provinces stretching from	5 years		To control and prevent against the sea-level raising and mitigate natural disasters	2.910

	sea embankment system spreading from Quang Ninh to Quang Nam provinces	Quang Ninh to Quang Nam				
3	Investment program for consolidating and upgrading sea embankment system spreading from Quang Ngai to Kien Giang province.	Provinces stretching from Quang Ngai to Kien Giang	5 years	To control and prevent against the sea-level raising and mitigate natural disasters		3.090
<b>VIII</b>	<b>SUPPORT TO NATIONAL TARGET PROGRAM FOR CLEAN WATER SUPPLY AND RURAL ENVIRONMENTAL SANITATION</b>					
1	Project for rural clean water supply in some coastal provinces of the Central Region	Phu Yen, Khanh Hoa, Ninh Thuan and Binh Thuan	5 years	To supply domestic water for people living in the areas with water scarcity		650
2	Component for domestic water supply and rural sanitation – under the climate change adaptation project in the Mekong Delta	Can Tho, Ca mau, Ben Tre and Dong Thap	5 years	To supply water and rural environmental sanitation for provinces salinized by the sea-level rising.		350
<b>IX</b>	<b>PROGRAM FOR FINALIZATION, UPGRADEATION, CLOSED CONNECTION OF IRRIGATION SCHEMES</b>					
1	Irrigation system between Tien River – Hau river (including Nam Mang Thit system)	Vinh Long, Tra Vinh	10 years	- To control the salinity of 30,000 hectares located in the affected areas (4g/l) and increase capacity of irrigation and drainage for approximately 60,000ha of Vung Liem (Vinh Long) and Tieu Can, Cang Long (Tra Vinh) districts; to improve domestic water supply for local people; to control tides and salinity and supply irrigation water and drain water for the Vung Lien basin, in particular and Nam Mang Thit region in general under the context of climate change – the sea level rising. - Main activities: to build Vung Liem, My Van, Bong Lot and Tong Ton culverts, to dredge the segment bordered by the Mang Thit river, primary canals connecting to Vung Liem river, including: Bung Truong canal, Tong Phi canal, Phop canal; to upgrade a 10 kilometer-embankment system along Co Chien river in the 2 communes, i.e. Trung Thanh Tay and Que An (Vung Liem); to build the secondary sewer system: Upgrade a 10 kilometre-embankment system along Co Chien river in 2 communes, that is Trung Thanh Tay and Que An (Vung Liem); to set up a secondary culvert system		800
						<b>10.000</b>

2	Irrigation system of Dong Thap Muoi Delta	Long An, Dong Thap	10 years	1.000	To prevent against floods overcrossing the borders and inflowing into the center of Dong Thap Muoi delta in the early and late harvest crops with aims to control the inundation in the inner Dong Thap Muoi delta to protect sustainable production of 2 crops., i.e. spring & winter; and autumn & summer in the deeply-submerged areas and the 3 <sup>rd</sup> crop in the shallowly-inundated areas; to limit losses of life and property of both local people and the State; to reduce cost price of infrastructural construction and population distribution; to facilitate to increase the alluvium from Tien river into the inland, especially in the areas administrated by Long An province; to cooperate with relevant agencies to establish the transport route N1, residential clusters along the borders, and the waterway transport route; to protect the national SouthWest border security. Main activities include: flood control embankment system, water supply canal and flood barrages so-called Hai Tam, flood control systems, i.e Hai Thang Chin, Khang Chien, Binh Thanh, Thong Nhat, Cai Cai and Tan Cong Chi; water supply and flood control systems, namely Sa Rai, Tan Thanh, Cai Bat, Tan Hung, Song Trang; and Tan Thanh – Hai Tam flyover bridges.
3	Irrigation system of Tu Giac Long Xuyen quadrangle	An Giang, Kien Giang	10 years	200	- To control salinity and keep fresh water and prevent against inundation of approximately 50,000ha in Chau Thanh and Tan Hiep districts and Rach Gia city; to improve water supply conditions to serve local people, especially in Rach Gia city - To control tides, prevent against salinity intrusion, supply irrigation water for the aforesaid areas, in particular and for the entire Long Xuyen quadrangle in general under the context of climate change - the sea-level rising Main activities: to build culverts at the end of the canal Rach Gia – Long Xuyen (about 60m), Tron canal (20m) and secondary canals connecting to Cai San canal; to dredge Rach Gia – Long Xuyen and Tron canals; to dredge the secondary culvert system .
4	Irrigation system of Ca Mau Peninsula (including irrigation system O Mon Xa No, Quan Lo Phung Hiep).	Kien Giang, Ca Mau, Bac Lieu and Hau Giang	10 years	1.000	- To develop irrigation system to meet the demands of agro-forest and marine production on the basis of the planning for agro-forest and marine economy restructuring by 2020 in consistent with the long-term development and adaptable to climate change – the sea level rising, meeting requirements for environmental protection and sustainable development; to finalize the irrigation system to sufficiently supply fresh and salt water for 1.2 million ha farming land; to control and use flood effects for 1 million ha of the West of

5	Irrigation system of Bac Ben Tre.	Ben Tre	10 years	<p>Hau River; supply water for domestic and industrial consumption; to develop a management and operation system in order to serve production activities of different sectors, and effectively use water resources</p> <p>- Main activities: 1. Finalize irrigation system Ô Môn - Xà No (build secondary culverts, dredge secondary canals). 2. Finalize irrigation scheme system Quan Lo – Phung Hiep which divides the boundaries of fresh and salt water flows (finalizing mobile barge dam). 3. Finalize Bien Nhi culvert, to invest in constructing Xeo Ro culvert. 4. To upgrade sea embankment system. 5. To dredge water intakes coming from Hau river 6. Culvert and Green Lock Cai Lon – Cai Be. 7. Irrigation system for marine production. 8. Finalize the secondary irrigation system. 9. To set up a Supervisory Control And Data Acquisition system (SCADA).</p> <p>- To ensure fresh water supply for production and domestic consumption of 900,000 local people living in 4 districts and cities of the North of Ben Tre province; to improve water environment and improve the quality of life of local people; to increase food, crop and animal production in order to meet domestic demands; to strive for a production of 360,000 tons of rice, ensuring an average per capita productivity ò 350kg/person/year by 2010; to serve socio-economic development strategy of Ben Tre province by achieving an average growth of 9.5%/year</p> <p>- Main activities: such important schemes as Ba Lai culvert, An Hoa culvert-cum-lock, Ben Tre culvert-cum-lock, Ben Ro culvert, upstream Ba Lai channel; salt breakwater system and schemes underneath the dyke system, including Ham Luong dyke (on the left), My Tho dyke (on the right), South China Sea embankment and culverts underneath such dykes (i.e Tan Phu, Thu Cuu, Son Doc 2, Dinh Trung, 27 culverts at the intake gate of the channels, 2 River training structures; The 1<sup>st</sup> channel system: about 240 km channels. The secondary irrigation system</p>	1.000
6	Repair and upgradation of Tan An – Dap Da system	Binh Phuoc	5 years	<p>- To irrigate, drain and control floods, keep fresh water and prevent against salinity intrusion of the total area of 16,000ha farming land in and nearby the Tan An Rockfill Dam; to cope with climate change – the sea-level rising to provide fresh water for 14,020ha in Tan A Rockfill Dam industrial zone and urban development in such districts as Phu Cat, An Nhon, Tuy Phuoc and Quy Nhon city</p> <p>- Main activities: Increase the altitude of spillways and culverts of the entire</p>	150

7	Drain and spill floods away, prevent against landslide in the downstream Thoa river	Quang Ngai	5 years	<p>system by 0.33 – 0.45m, to replace inlet and exhaust valves</p> <ul style="list-style-type: none"> <li>- Drain and spill floods away, control early, late and sub-chronic floods, prevent against salinity intrusion and keep fresh water for 2 crop agriculture production practice; to fight against riverine landslides; adapt and live with the main flood season; to stabilize and improve local people's life in project selected areas.</li> <li>- Main activities: dredge and expand the cross section of the Axis of the major drainage up to about 28km in length, to deflect water flows of the 2 meandering reaches of Thoa river;revet the embankment from K6+322 to K28+117 (21.8km in length); torevet some reaches of the total length of 2.2km of the axis of the major drainage which are covered with a cladding of stone, concrete or geotextile used to protect the sloping surface of the embankment against erosion; to construct 84 water-regulating schemes on the main drainage axis, including 4 dams and 56 drainage culverts connecting between paddy fields and canals, 14 decentralized pumping stations and 10 transport bridges</li> </ul>	350
8	Upgradation of irrigation system Ninh Hoa Dai, Quang Dien district	Thua Thien Hue	5 years	<ul style="list-style-type: none"> <li>- To ensure a fast floodway, not causing inundation, to thoroughly prevent against sub-chronic and early floods covering 4,400ha farming land for summer-spring crop in Sia town and 6 communes; to ensure sustainable irrigation in dry season; to reduce the time of inundation in project areas in case where main flood season starts up, to improve ecological environment, contributing to gradually improve people's life in project area; to combine between development of littoral zones into public transport system and secondary transport ways</li> <li>- Main activities: to dredge and build 2 new drainage culverts; upgrade the right and left banks of Bo river; upgrade and consolidate the bald-headed Dyke Dien Hong; to dredge andrevet the embankment into transport road; expand 02 drainage culverts; And build 7 pumping stations</li> </ul>	190
9	Upgradation of the irrigation system Rac river canal system	Ha Tinh	5 years	<ul style="list-style-type: none"> <li>- Consolidate the irrigation system Rac river canal system in order to ensure water supply capacity as designed, providing sufficient irrigation water for 8,150 ha farming land and domestic consumption by local people in the vicinity</li> <li>- Main activities:consolidate primary canals and primary canals + reinforce the trapezium-formed cross section of the primary canals with concrete, construct</li> </ul>	250

10	Restoration and upgradation of irrigation system Bai Thuong	Thanh Hoa	5 years	<p>roads at the 2 banks for management and operation; + Channel 1: reinforce the rectangle-formed cross sections with concrete to turn them into the walkway for operation and management + Primary channel: reinforce the rectangle cross section with concrete + project management facilities and equipment</p> <p>- To ensure irrigation water for 49,800ha and meet domestic water consumption for local people, especially Thanh Hoa city and other districts which the irrigation system passes by</p> <p>- Main activities: repair and upgrade the following channels: 19.3 km central channel, 54km Northern central channel, 37km Southern central channel; 53km C6 and N8 channels; some secondary canal routes with the total length of 137km</p>	450
11	Restoration and upgradation of irrigation system Bac Nam Ha	Nam Dinh – Ha Nam	5 years	<p>- Propose solutions to irrigation development to meet water consumption demands for production re-arrangements and economic restructuring, especially shifting from paddy cultivation into aquaculture, plantation of high economic value industrial crops and fruit trees, flood spillways and flood control, natural disaster mitigation and ecological environmental protection etc... with the orientation towards sustainable development and effective use of land and water resources; to ensure a sustainable development of water supply for agricultural production and other economic sectors, water drainage, flood control, natural disaster mitigation with aims to meet socio-economic development demands for the period 2008 - 2010 and by 2020.</p> <p>- Main activities: 1. Restore and upgrade 30 different kinds of culverts underneath the dyke system. 2. Restore and upgrade 14 pumping stations. 3 Reinforce the 1<sup>st</sup> grade, 2<sup>nd</sup> grade and 3<sup>rd</sup> grade irrigation system. 4. Establish 12 pumping stations; 5. Dredge the drainage system. 6. Upgrade dyke segments of the entire system</p>	300
12	Restoration and upgradation of irrigation system Bac Hung Hai.	Hai Duong, Hung yen, Bac Ninh, Ha Noi	5 years	<p>- To make investment in repairing and upgrading irrigation schemes to ensure the water supply for 109,978ha paddy and industrial crops; provide water resource for animal and poultry production as well as 21,000ha of aquaculture; to provide water supply for more than 3 million local people and 4,240 ha of industrial zones and handicraft production establishments; to drain 192,045ha inside the dyke; to protect agricultural production, economic entities and population clusters; to maintain water flows and minimize water pollution and depletion, protect ecological environment, cope with climate change impacts, contributing to stabilizing local people's life</p>	850

13	Repair, upgradation of pumping stations and irrigation system of Tan Yen, Viet Yen and Hiep Hoa districts of the irrigation system of Cau River, Bac Giang province	Bac Giang	5 years	<ul style="list-style-type: none"> <li>- Main activities: 1. Dredge rivers main rivers. 2. Re-build Cau Xe culvert, repair An Tho culvert. 3. Build new culvert intake from Red River. 4. Build a new culvert and pumping station intake from Luoc river 5. Repair and upgrade irrigation schemes and dyke segments of the entire system.</li> <li>- To ensure irrigation water supply and drainage of the system covering Hiep Hoa, Viet Yen and Tan Yen districts of Bac Giang province; increase the productivity of key pumping stations, ensuring the safety of the operational mechanism to serve agricultural production</li> <li>- Main activities: Automatic irrigation system: consolidate 46.6 km canal (primary canal: 21.1km; canal grade 2: 25.5 km) which irrigate 7,691 ha; hydro dynamic irrigation system: restore and upgrade 04 pumping stations for 2 Viet Yen and Tan Yen districts and 10 km drainage canal (Truc Nui, Gia Son, Huu Nghi, Lien trung), supply water for 728 ha; and drain 691 ha; to construct 2 operating building offices with the total area of 1920m<sup>2</sup>.</li> </ul>	200
14	Other irrigation projects				
14.1	Repair and upgradation of irrigation schemes including Pac Ta, Muong So, Noong Heo, Then Sin, Ho Thau, Binh Lu, Ban Bo, Muong Kim, Muong Than.	Lai Chau	5 years	To supply irrigation water for approximately 2500ha paddy in some communes of Tan Uyen, Phong Tho, Sin Ho, Tam Duong districts and Than Uyen district	100
14.2	Construction of Huoi Be and Huoi Trang Tai reservoirs	Dien Bien	5 years	To supply irrigation water for 200ha and supplement water for Nam Rom canal system	200
14.3	Construction of Van Lang reservoir.	Thai Nguyen	5 years	<ul style="list-style-type: none"> <li>- Supply additional water for the Thac Huong irrigation system in dry season to enable to irrigate 25,100ha farming land; to regulate water to ensure the minimum water flows of Cau river behind Thac Huong dam in drought season; to improve ecological environment in the province; to control floods in Thai Nguyen city in combination with power generation; aquaculture in reservoir beds; tourism landscape development</li> <li>- Main activities: to build reservoirs with the total capacity of 100.6 million m<sup>3</sup>, build key schemes in Van Lang commune, being 2 km away from the confluence of Cau river and Cai stream towards to the downstream, away 30 – 35km away from Thai Nguyen city to the Southwest; capacity of additional irrigation water supply for 25,100ha farming land of Thac Huong irrigation</li> </ul>	900

					system, ensuring the minimum water flows of Cau River behind the Thac Huong dam at 6.7m <sup>3</sup> /s to improve the regional ecological environment in combination with power generation with the capacity of about 15MW.	
14.4	Restoration and upgradation of pumping station Truc Tay.	Bac Giang	3 years	3	Drain water for 8,276ha of basin, including 3,604ha of industrial zone and urban areas according to new targets developed for the period 2008 - 2015	100
14.5	Repair and upgradation of Lien Son dam.	Vinh Phuc	3 years	3	To ensure the safety of the dam together with pumping stations, i.e. Dai Dinh and Bach Hac, and to supply sufficient irrigation water for more than 20,000ha in such districts as Vinh Tuong, Yen Lac, Lap Thach, Vinh Yen and Tam Dung and a part of Me Linh district (Hanoi); to provide water for nearly 1,000ha farming land behind the downstream Lien Son dam	200
14.6	Restoration and upgradation of Phu Sa pumping station	Hanoi	3 years	3	- To supply water for more than 20,000ha/3 crops in 4 districts - To supply water for a partial area irrigated by the irrigation system Dong Mo - To supply water for domestic consumption and economic development and to meet other demands	200
14.7	Upgradation and dredging of Co Le – Ba Nu canal of the Nam Ninh irrigation system.	Nam Dinh	3 years	3	To provide a sufficient water supply for 1,700ha farming and watering 2,823ha natural land in 8 communes Nam Thanh, Nam Loi, Nam Hai (Nam Truc district); Co Le town, Trung Dong, Truc Tuan, Truc Dao, Truc Thanh (Truc Ninh district); In addition, to meet local people's domestic water demands and to improve environment; to fight against the water course encroachment, to improve local people's life and culture in the province	50
14.8	Repair and upgradation of Chat Thanh and Quy Hau pumping stations in Kim Son districts	Ninh Binh	3 years	3	To provide a sufficient water supply for 2,918 ha (including 1,500ha farming land) in 11 communes; to sufficiently irrigate 2 crops, to serve intensive agricultural production; to increase the number of crops and productivity and improve environmental pollution in project areas	100
14.9	Urgently dredging and restoring the main channel Tien Hoang which supplies water for Yen Khanh and Kim Son districts	Ninh Binh	3 years	3	Irrigate 4,354ha of natural land in Yen Khanh district and a part of Kim Son district; to supply irrigation water for 2,613ha of farming land to meet demands of agricultural production and environmental sanitation in project area.	80
14.10	Nam Viec irrigation system System, Que Phong district, Nghe Anh province.	Nghe An	3 years	3	- To supply irrigation water for 640 ha of agricultural land; to develop animal raising (2,849 buffaloes, 642 cows, 2,799 pigs, 26,556 poultry and 23 tons of fishes); - Tourism: to promote the natural landscape of Sao Va Waterfall in combination with water resource project development in order to explore	130

					tourism opportunities	
14.11	Construction of Suoi Cai Tan reservoir in Phu Hoa district, Son Hoa	Phu Yen	5 years	To improve the capacity of irrigation supply, drainage and safety of the reservoir under climate change context		250
14.12	Repair and upgradation of Da Mai lake	Khanh Hoa	3 years	To improve efficiency of the operation and capacity of water supply for 198ha and the safety of reservoirs under the climate change context		100
14.13	A group of Dak Long, Dak Ro Gia and Dak Ro Net structures	Kon Tum	3 years	To improve the efficiency and capacity of water supply under the climate change context		100
14.14	Da Lay Reservoir	Lam Dong	5 years	To construct Da lay reservoir and irrigation system for 1,118ha of farming land and to meet local people's domestic water consumption demands		250
14.15	Da Si Reservoir	Lam Dong	5 years	To construct reservoirs and irrigation system for 1,517 ha of farming land and generate a supply of domestic water for local people in the province		250
14.16	Water transferring channel Bien lac – Ham Tan, Tanh Linh and ham Tan district	Binh Thuan	5 years	- To supply water for 1,500ha of farming land in Ham Tan district; - To supply untreated water for 2,336ha in Tan Duc industrial zones (900ha), Tan Phuc (800ha) and Son My (636ha) by means of increasing the capacity of Song Dinh 3 reservoir - To supply untreated water for 120,000 people of population clusters and services in industrial zones		250
<b>X</b>	<b>IRRIGATION WORKS FOR AQUACULTURE</b>					
1	Infrastructure construction for Aquaculture in low-lying fields in Nho Quan, Gia Vien and Hoa Lu districts, Ninh Binh province	Ninh Binh	5 years	To construct complete infrastructure for aquaculture for about 1,200ha of low-lying paddy fields in Nho Quan districts (500ha), Gia Vien (400ha) and Hoa Lu (300ha)		120
2	Upgradation of the irrigation system for aquaculture area to the west of the transport intersection of Long Xuyen city.	An Giang	5 years	To upgrade the irrigation system to supply water for 1,265ha of aquaculture		230
3	Upgradation of the irrigation system for cattle fish aquaculture in Cao	Dong Thap	5 years	To upgrade the irrigation system to supply water for 942ha of aquaculture		150

Lanh and Chau Thanh districts					
4	Upgradation of irrigation system of aquaculture for sub-region III Nam Ca Mau	Ca Mau	5 years	To upgrade the irrigation system to supply water for 7,420ha of aquaculture	150
5	Irrigation system for Tan Duyet Aquaculture in Dam Doi district	Ca Mau	3 years	To upgrade the irrigation system to supply water for 4,902ha of aquaculture	100
6	Upgradation of irrigation system for aquaculture Tam Vu Lo – Cau Ngang district	Tra Vinh	3 years	To upgrade the irrigation system to supply water for 1,080ha of aquaculture	100
7	Upgradation of infrastructure for industrial and semi-industrial shrimp production Long Dine Dong commune, Dong Hai district	Bac Lieu	3 years	To upgrade the irrigation system to supply water for 5,520ha of aquaculture	150
<b>XI</b>	<b>CONSTRUCTION OF RIVERINE SCHEMES AND SALINIZATION AND TIDE CONTROL SCHEMES</b>				<b>5.000</b>
1	Hoa river dam	Thai Binh	10 years	<p>- To prevent against salinity intrusion and keep fresh water and provide water supply for approximately 8,500ha farming land along Hoa river banks; to supply water for about 3,700ha of aquaculture in Vinh Bao, Thai Thuy and Quynh Phu districts; to ensure floodway and waterway transport conditions on the Hoa River, in combination with transport bridges of the coastal economic route</p> <p>- Main activities: a combination of dams, culverts, locks and transport bridges; the key dam is located in the pier crossing Hoa river in village 12 of Vinh Tien commune; the barrier is built to connect between culvert to the left side of Hoa river dyke; floodway and lock are located on the right of Hoa river.</p>	200
2	Tra Ly dam	Thai Binh	5 years	<p>- To prevent against salinity intrusion and keep fresh water and provide water supply for approximately 19,000ha of farming land on the 2 banks of Tra Ly river; to generate fresh water for about 370,000 people and different economic sectors in Thai Binh province; to ensure floodway and waterway transport conditions on Tra Ly river, in combination with transport bridges of the coastal economic route</p> <p>- Main activities: a combination of dams, culverts, locks and transport bridges;</p>	350

3	Do Han dam	Hai Phong	5 years	<p>the key dam is located in Dong Quy commune of Tien Hai district; the barrier is built to connect between culvert to the left side of Tra Ly river dyke; floodway and lock are located on the right of Tra Ly river.</p> <ul style="list-style-type: none"> <li>- To prevent against salinity intrusion and keep fresh water and provide water supply for about more 10,000 ha farming land on the 2 banks of Thai Binh river and supply water for approximate 2,500ha of aquaculture in the 2 districts of Tien Lang and Vinh Bao – Hai Phong city; to ensure the combination between waterway and road transport systems crossing Han dame TL – 211-TLD-TL 39B (Kien Giang – Tien Lang – Vinh Bao – Hai Phong and Thai Thuy – Thai Binh); to ensure waterway transport conditions for medium and small – sized boats travelling over the Thai Binh rivers; to ensure floodways in rainy and flood seasons</li> <li>- Main activities: important schemes, regulating culverts, locks, river-overcrossing bridges; dredge Thai Binh river; to supply fresh water for project areas through the culverts underneath the upstream of Han dam on Thai Binh river + culvert intake coming from the left side of Thai Binh river: supply water for the South of Moi river + culvert on the right side of Thai Binh river: to supply water for the northeast region Vinh Bao; the culvert and channel system</li> </ul>	400
4	Len river dam	Thanh Hoa	5 years	<ul style="list-style-type: none"> <li>- To prevent against salinity intrusion and keep fresh water and provide water supply for existing pumping stations which are enable to irrigate more than 24,000ha of farming land for winter-spring and summer-autumn crops, including more than 3,000ha salted coastal areas and meet domestic water demands of 250,000 coastal local people, to improve water quality. Floodway: to virtually restore primitive state of floodway of Len river; to control the flood level rising so as not to have negative impacts on the drainage of internal rivers and to avoid the overtopping</li> <li>- Main activities: Floodways with two-way valves (14 water-regulating gates); locks, the barriers overcrossing Len river; locks on De canal; fresh water supply system for 5 coastal communes of Hau Loc</li> </ul>	600
5	Repair and upgradation of Ben Thuy culvert	Nghe An	3 years	<ul style="list-style-type: none"> <li>- Drain and fight against floods, prevent from salinity intrusion and keep fresh water for more than 30,000ha farming land in the region and ensure the waterway transport</li> <li>- Main activities: upgrade, repair all 1 culverts (increase the aperture and replace opening and closing valves etc...)</li> </ul>	100

6	Breakwater sea wall of Hieu river	Quang Tri	5 years	<p>- To prevent against salinity intrusion, keep fresh water and generate water supply for 2,400ha farming land in such communes as Cam Thanh, Cam Hieu, Cam Thuy and Cau An of Cam Lo district and Dong Thanh ward of Dong Ha city; to meet domestic water consumption by more than 25,000 people living along the 2 banks of Hieu river and supply water for cement factory with the capacity of 600,000 tons/year, to connect transport system (connecting the population clusters living at the 2 opposite banks of the river in 3 communes/wards to the North of the river and 2 communes to the South of the river); to create environmental landscape at the same time sustain floodways of the upstream of Hieu river dam.</p> <p>- Main activities: To build spillway with the length of 105m, 7 gates and 01 lock; to construct transport bridges overcrossing the spillway with the length of 10m and the path connecting the 2 river banks; to build up 2 pumping stations: Quat Xa and Lam Lang</p>	300
7	Downstream Dinh river dam	Ninh Thuan	5 years	<p>- To prevent against the salinization caused by tides in the 2 banks of Dinh river; to create a fresh water reservoir with the capacity of about 4 million m<sup>3</sup> to supply water for production activities and domestic water consumption by local people living along the 2 banks of Dinh river; to contribute to improving environment and climate conditions in Phan Rang – Thap Chap city; to meet tourism development demands and to develop transport conditions to meet the urban development needs</p> <p>- Main activities: To construct the downstream Dinh river dam on the 500meter of the river 1.8km away from Dao Long bridge to the beach, including such items as weir, feed-regulating valve and lock; walk path on the surface of the dam, the scheme management office building</p>	350
8	Culvert system of Vam Co river	Long An	10 years	<p>- To operate the scheme operational mechanism to control over salinity and keep fresh water to supply water for the upstream of Vam Co culvert; to enhance the drainage capacity in order to relieve the effects of inundation caused by heavy rains and floods; to drain polluted, acidized and salinized water etc... in order to improve soil and water environmental conditions and to promote positive impacts and mitigate negative impacts from floods occurring in basins; to prevent against tides and the sea-level rising and natural disasters, to ensure the safety of production activities, life and property of local people living in project areas; and to combine between road transport and waterway development in project areas;</p>	1.000

	Cai Lon – Cai Be river system	Kien Giang	10 years	<p>- Main activities: Vam Co culvert-cum lock with an estimated aperture of 500 - 600m is located in riverine areas behind the confluence of the 2 Vam Co river. There is a distance of 3 – 5km between 2 primary canals which have a 10-30cm bed area, -3 to -4 cm bed height; irrigation schemes at all different levels and on-farm irrigation system which enable to serve agricultural and marine production development</p> <p>- To control salinity intrusion in order to supply sufficient fresh water for U Minh Thuong and U Minh Ha regions for the purpose of ecology-oriented production expansion which needs fresh water resources, as well as forest fire management; enhance the drainage capacity with aims to relieve negative effects of inundation, to drain polluted, acidized and salinized water etc in order to improve soil and water environmental conditions; to prevent against tides and the sea-level rising and natural disasters; to ensure the safety of production activities, life and property of local people living in project areas; to combine between road transport and waterway transport development in project areas;</p> <p>- Main activities: Cai Long and Cai Be lock with an estimated aperture of 500m and 200m is located in riverine areas; the channel system which transfers fresh water from Hau river to Ca Mau Peninsula. There is a distance of 3 – 5km between 2 primary canals which have a 10-30cm bed area and -3 to -5 cm bed height; the sea dyke system and subordinating works which enables to provide more fresh water for Ca Mau peninsula; and irrigation schemes at all different levels and on-farm irrigation system which enable to serve agricultural and marine production development</p>	1.700
<b>XII</b>	<b>RURAL INFRASTRUCTURE</b>				<b>5.000</b>
1	Livelihood improvement for fishermen communities in coastal areas in Vietnam	Coastal provinces	6 years	To improve living standards of people living in coastal provinces	1.200
2	Rural infrastructural development in Mekong delta provinces under climate change context.	Mekong delta	6 years	To build and restore, to upgrade rural infrastructural schemes	1.000
3	Agricultural research infrastructure development for the purpose of CC	20 research institutes	6 years	To invest in human and material resource development for research and training institutions	800

	adaptation.					
4	Rural infrastructure development in provinces of the Central Region and Binh Phuoc province.	provinces of the Central Region and Binh Phuoc province	6 years	To construct and restore and upgrade rural infrastructure		1.000
5	Rural infrastructure development in difficult communes to the South of the Red river and Thanh Hoa province	Red river delta and Thanh Hoa province	6 years	To construct and restore, upgrade rural infrastructure		1.000
<b>Total fund:</b> (seventy two thousand billion dong)						<b>72.000</b>

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