REPUBLIC OF THE PHILIPPINES
Department of Budget and Management
Climate Change Commission

JOINT MEMORANDUM CIRCULAR

No. 2013-01
December 27, 2013

FOR : All Heads of Departments, Agencies, Bureaus, Offices, Commissions, State Universities and Colleges, Other Instrumentalities of the National Government and all Others Concerned

SUBJECT : **Guidelines in Tagging/Tracking Government Expenditures for Climate Change in the Budget Process**

1.0 RATIONALE

Global climate change, a key development issue for the present and the future, has severe consequences, with the majority of human and economic impacts occurring in developing countries. The Philippines, due to its current and future exposure to climate-related risks, compounded by rapid degradation of the environment and unsustainable development practices, is highly vulnerable to existing and future climate change-related risks as shown by the devastations caused by recent strong typhoons like Pablo and Yolanda.

Legal Framework

Recognizing the challenges posed and opportunities created by climate change, the Government passed Republic Act 9729, known as the Climate Change Act, which mandates government agencies to mainstream climate change into policies, plans and programs in order to build a more solid foundation for climate resiliency. The Government also formulated the National Climate Change Action Plan (NCCAP), a strategic climate change reform agenda that spans three 6-year phases from 2011-2028 to align and define climate goals and execute agreed-upon actions across national and local agencies. The Disaster Risk Reduction and Management (DRRM) Act was issued involving a paradigm shift from a reactive approach focused on disaster rehabilitation and recovery to a preventive approach focused on prevention and preparedness. Both the NCCAP and DRMM recognize climate change adaptation as the appropriate means for climate disaster prevention.

Climate Actions and Inclusive Growth

Envisioning a climate resilient Philippines, the government aims to build the adaptive capacities of women and men in their communities, increase the resilience of vulnerable sectors and natural ecosystems to climate change, and optimize mitigation opportunities towards gender-responsive and rights-based sustainable development.

Implementing climate change activities supports sustainable development goals by strengthening climate disaster prevention. Adaptation measures will result to a country more resilient to climate impacts by helping to achieve development objectives set by the Philippine Development Plan and the Millennium Development Goals. Small-scale sustainable and climate resilient farming and forest management will create the needed jobs in the rural areas. Similarly, climate change mitigation activities, which often call for the use of new clean technologies, will drive innovation and promote economic growth. Low-carbon measures that increase renewable energy generation and improve energy efficiency will also decrease local pollution.

National Government Policy

The Cabinet was reorganized into clusters with one cluster focused on Climate Change Adaptation and Mitigation (CCAM). This cluster shall lead in pursuing measures to adapt to and mitigate the impacts of climate change.

The Government in its Budget Priorities Framework for FY 2014 has put climate change adaptation and disaster risk reduction and management as a major expenditure priority in the preparation of the FY 2014 Agency Budget Proposals in order to give focus to programs on climate change adaptation and mitigation.[1] Tracking the associated expenditures through the budget management system is essential for identifying them, ensuring their transparency and enhancing their effectiveness. Following the Typhoon Yolanda disaster, the Government is already putting in place measures to better track and account for the recovery and rehabilitation expenditures. This initiative, focused on climate change adaptation and mitigation programs, provides a means for tracking the resilience enhancing component of the build-back-better campaign.

2.0 PURPOSE

To identify, tag and prioritize climate change-related activities for all government agencies; and,

To take stock of relevant climate change programs, projects and activities to enable oversight and line department managers to track and report climate change-related expenditures.

3.0 DEFINITION OF TERMS

1. Climate Change – a change in climate that can be identified by changes in the mean and/or variability of its properties and that persists for an extended period typically, attributed directly or indirectly to human activity that alters the composition of the global atmosphere and is in addition to natural climate variability observed over comparable time periods.[2]

[1] NBM 118 dated April 25, 2013

[2] As defined in the United National Framework Convention on Climate Change (UNFCCC)

2. Climate Change Adaptation – adjustments in human and natural systems in response to actual or expected climate signals or their impacts, that moderate harm or exploit beneficial opportunities.

3. Climate Change Mitigation – activities that are aimed at reducing greenhouse gas emissions (GHG), directly or indirectly, by avoiding or capturing GHG before they are emitted to the atmosphere or sequestering those already in the atmosphere by enhancing "sinks" such as forests.

4. Vulnerability – the degree to which geo-physical, biological and socio-economic systems are susceptible to, unable to cope with the adverse impacts of climate change.

5. Resilience – the ability of social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning and capacity for self-organization and to adapt to stress and change.

6. Risk – the concept combines the magnitude of the impact (a specific change in a system caused by its exposure to climate change) with the probability of its occurrence (IPCC 4th Assessment Report, Working Group II, Appendix I)

7. Preparatory activities - shall include but not be limited to vulnerability and impact assessment studies, climate change and variability researches, climate modeling, capacity building, policies, other related activities.

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8. P/A/Ps - refers to programs (GAS, STO, operations)/activities and projects of the agency as presented under their budgets in the General Appropriations Act (GAA).

4.0 GUIDELINES

4.1 To minimize the risks associated with climate change, strategies and investments for adaptation and mitigation are necessary. All climate change related strategies and investments of the government shall be identified as follows:

4.1.1 Adaptation responses

4.1.1.1 Measures that address the drivers of vulnerability. Vulnerability is the result of the magnitude of exposure of humans and ecosystems to climate-related hazards. Some of the drivers of vulnerability are poverty, lack of economic assets and lack of knowledge on the risks since they limit the capacity of the exposed population to cope properly to climate change. Some of the expenditure programs that fall under this category include poverty reduction, income and livelihood diversification, and health programs that are specifically designed to respond to climate change risks and variability.

4.1.1.2 Measures that directly confront climate change impacts. These types of expenditures are those that directly address the impacts or potential impacts of climate change variability, such as infrastructures that incorporate climate change risks in their

design and/or their implementation to minimize impacts from climate change risks.

4.1.1.3 Measures that build resilience to current and future climate risks. Building resilience means increasing the capacity of the social or ecological system to reach or maintain an acceptable level of functioning or structuring while undergoing changes. Expenditure programs under this category shall include but not be limited to reducing land degradation, reforestation programs, climate resilient crop varieties or farming techniques, effective early warning systems and other investments specifically designed to respond to projected climate changes and variability.

4.1.2 Mitigation responses

4.1.2.1 Measures to reduce greenhouse gas (GHG) emissions such as but not limited to improved energy efficiency, renewable energy projects, reforestation/ improved forest management, and improved transport systems.

4.2 Climate change adaptation and mitigation expenditures in the budget of national governments encompass or cut-across the five (5) key result areas of the President's Social Contract. To classify climate change related-expenditures to be tagged in the Online Submission of Budget Proposal (OSBP), the following shall be undertaken:

4.2.1 Identify P/A/Ps with climate change-related adaptation and mitigation expenditures;

4.2.2 Determine the climate change component/s within the P/A/Ps using the Climate Change Typologies (Annex A);

4.2.3 Specify the amount of climate change component/s consistent with Items 4.2.1 and 4.2.2.

5.0 ROLES AND RESPONSIBILITIES

5.1 Departments, Agencies, Bureaus, Offices, Commissions, State Universities and Colleges, Other Instrumentalities of the National Government and all Others Concerned shall:

5.1.1 Identify and tag in the OSBP, the climate change-related expenditures shown in the Climate Change Typologies (Annex A);

5.1.2 Submit to CCC and DBM the list of tagged climate change per P/A/P during the annual submission of budget proposal as prescribed in the National Budget Call (NBC) for review/evaluation; and,

5.1.3 Seek the approval of CCC for typology proposals which do not fall under the existing Climate Change Typology.

5.2 The Department of Budget and Management (DBM) shall:

5.2.1 Ensure that the submission of the concerned Departments, Agencies, Bureaus, Offices, Commissions, State Universities and Colleges, Other Instrumentalities of the National Government and all Others Concerned is consistent with the above Section 5.1.2; and,

5.2.2 Provide CCC with the list of tagged climate change-related sub-activities per P/A/P after the printing of the National Expenditures Program (NEP) and General Appropriations Act (GAA).

5.3 The Climate Change Commission (CCC) shall:

5.3.1 Evaluate agency proposal of climate change components against the existing typology;

5.3.2 Review and approve new typology proposals of the agencies; and,

5.3.3 Attend and participate in the Technical Budget Hearings (TBH) of concerned agencies, when necessary.

6.0 For immediate compliance.

FLORENCIO B. ABAD
Secretary
Department of Budget and Management

MARY ANN LUCILLE L. SERING
Secretary
Climate Change Commission

Is the Program/Activity/Project (P/A/P) explicitly address any of the following?

☐ **Adaptation**: There is explicit articulation of climate change adaptation in the project or activity objectives with evidence of or intent to *use climate information to specifically design responses to current and future climate change risks and variability and their impacts* to human, ecological and economic systems, or the opportunities they bring.

☐ **Mitigation**: There is explicit articulation of climate change mitigation responses in the program objectives based on *targets or opportunities that (a) reduces or limits greenhouse emissions, (b) increases GHG sequestration, or (c) protects carbon sinks*

(Strategic Priority) 1 - FOOD SECURITY

Adaptation		Mitigation	
(Sector) 1 - General Agriculture			
(Sub-Sector) 1 - Policy and Governance (A111 or M111)			
A111-01	Regulate commodity shifting and agricultural land conversion	**M111-01**	Intensify or expand farm production using techniques that reduce GHG emissions or increase carbon sequestration
A111-02	Review and harmonize existing policies on food production and distribution		
A111-03	Design and implement climate change risk transfer and social protection mechanisms for agriculture and fisheries*		
2 - Research, Development and Extension			
A112-01	Conduct provincial-level agricultural vulnerability and risk assessment studies and maps*	**M112-01**	Develop, test and introduce practices or techniques that reduce GHG emissions in crop production systems, animal husbandry systems, forest management systems and aquaculture management systems
A112-02	Conduct of studies and simulation models on the impacts of climate change on major crops and livestock*	**M112-02**	Develop, test and introduce practices or techniques to sequester CO2 in agriculture, fishing and forestry
A112-03	Develop and/or update climate change R&D agenda for agriculture*	**M112-03**	Sustainable land and water management that addresses land degradation and agroecological conditions
A112-04	Develop climate-resilient crop production systems and technologies*	**M112-04**	Sustainable grassland management
A112-05	Establish early warning systems for agriculture*		
A112-06	Develop, test and introduce practices or techniques more resilient to climate change and climate variability in farming*		
A112-07	Develop, test and introduce management systems for commons better adapted to CC&CV		
A112-08	Research increased and new threats to agriculture, fishing, and forestry from CC&CV		
A112-09	Ex situ conservation of species and germplasm adapted to CC&CV		
A112-10	Support incorporation of CC&CV into extension services and programs		
A112-11	Awareness raising of risks from CC&CV climate change risks or/and benefits of adaptation		
3 - Information and Knowledge Sharing			
A113-01	Establish climate information systems and database for agriculture and fisheries sectors*		
A113-02	Conduct IEC on CC to promote best practices*		
A113-03	Develop accessible and gendered knowledge products on climate change risks, adaptation and DRR for agriculture and fisheries*		
A113-04	Establish a resource network on climate change agriculture		
A113-05	Review agriculture education and develop climate change-responsive curricula*		
A113-06	Establish farmers' field school to demonstrate best adaptation practices*		
4 - Capacity Building			
A114-01	Conduct climate change and disaster risk reduction training for		

	farming and fishing communities* Develop non-formal training programs on CCA best practices		
	5 - Crop Production		
A115-01	Recover degraded areas for crop production through innovative management practices	**M115-01**	Integrated organic and inorganic nutrient management
A115-02	Introduce or expand soil management practices that control soil erosion, nutrient loss and improve the water regime in the soil profile	**M115-02**	Switch to soil management techniques that reduce GHG emissions or increase carbon sequestration
		M115-03	Reduce CH4 and NOx emissions in rice cultivation
A115-03	Introduce or expand use of crops or crop mix more suited to CC&CV		Switch to less water intensive crops
A115-04	Reduce vulnerability of crop storage facilities to CC&CV		
	2 - Livestock		
	1 - Research, Development and Extension		
A121-01	Conduct of studies and simulation models on the impacts of climate change on major livestock based on the VA and climate change scenarios*		
A121-02	Develop climate resilient livestock production system and technologies		
	2 - Animal production		
A122-01	Change management practices or techniques to reduce vulnerability to CC&CV in animal health service, pasture management, fodder production and storage practices	**M122-01**	Increase sequestration capacity in fodder production and management
		M122-02	Reduce release of GHGs in fodder production and management
A122-02	Change fish farming and aquaculture practices or techniques to reduce vulnerability to CC&CV	**M122-03**	Manure management and methane capture in animal husbandry
		M122-04	Change forage systems to reduce ruminant methane emissions
		M122-05	Reduce fishing fleet
		M122-06	Improve energy efficiency in fishing fleets
	3 - Fisheries		
	1 - Policy and Governance		
A131-01	Implement climate-responsive and gender-sensitive Comprehensive National Fisheries Industry Development Plan*		
A131-02	Formulate guidelines on reversion of abandoned fishponds back to mangroves		
A131-03	Harmonize climate change adaptation plans in local resource management and local fisheries development*		
	Integrated Coastal Zone Management responding to CC&CV		
	2 - Research, Development and Extension		
A132-01	Conduct of provincial-level vulnerability and risk assessments for the fisheries*		
A132-02	Conduct researches on best practices in fisheries and coastal climate change adaptation, technologies and tools		
A132-03	Develop and/or update climate change R&D agenda for fisheries sectors*		
A132-04	Establish early warning systems for fisheries*		
A132-05	Conduct policy study on climate change risk transfer and social protection mechanisms for agriculture and fisheries*		
	3 - Information and Knowledge Sharing		
A133-01	Establish a resource network on climate change and fisheries		
A133-02	Review fisheries education and develop climate change-responsive curricula*		
A133-03	Establish climate information systems and database for fisheries sector*		
	4 - Public Administration		
A140-01	Assess economic, environmental or social impact of CC&CV on agriculture, forestry and fishery	**M140-01**	Introduce rules and regulations to reduce the emissions of GHGs, or absorption of GHGs in the agricultural, fishing and/or forestry sectors
A140-02	Incorporate CC&CV considerations in rural policies and institutions	**M140-02**	Public administration of sustainable land and water

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A140-03	Establish or strength regulatory institutions and policies as instruments for adaptation to CC&CV		management that address land degradation and agroecological conditions
A140-04	Monitor impacts of CC&CV or the befits of adaptation measures	**M140-03**	Monitor carbon sequestration
		M140-04	Establish or strengthen institutions, information systems and capacity building on energy and water use efficiency in agriculture, fishing, forestry sector
		M140-05	Sector studies, surveys, assessments on energy and water use efficiency in agriculture

2 - WATER SUFFICIENCY

Adaptation		Mitigation	
1 - Policies and Governance			
A201-01	Review (w/ CC lens) Water Code for possible amendment*		
A201-02	Review and streamline existing water resources management and institutional structure and policies*		
A201-03	Develop guidelines for implementing Integrated Water Resources Management (IWRM) and climate change adaptation (CCA) at the local, watershed and river basin level*		
A201-04	Develop policy and guidelines for water conservation, allocation, recycling and reuse		
A201-05	Integrate in the National Building Code a requirement for all water-intensive facilities to have water recovery system*		
A201-06	Develop and implement a comprehensive ground water management program that includes vulnerability assessment*		
A201-07	Review financing, tariffs, and system of incentives to reflect the full cost of providing safe water*		
A201-08	Conduct a policy study to promote eco-efficient water infrastructures, water conservation, reuse and recycling for water-intensive industries*		
2 - Research and Development			
A202-01	Conduct ground water resource vulnerability and recharge areas assessment in water stressed cities*		
A202-02	Define areas not suitable for large water infrastructure development and settlements based on the V&A*		
A203-03	Study "low-cost, no-regrets" adaptation measures and technologies under various hydrologic conditions, supply-demand conditions, and policy scenarios for surface and groundwater systems*		
A203-04	Develop and implement monitoring networks for hydrologic trend analysis, forecasting and detecting shifts in trends of precipitation and stream flow*		
A203-05	Develop Climate Change Research and Development Agenda for the Water Sector*		
	Develop and network government databases on water resources and users*		
3 - Capacity Building			
A203-01	Capacity building for farmers to incorporate CC&CV		
A203-02	Review, revise and implement program to improve the capacity of key regulatory agencies to fully implement the Clean Water Act and National Septage and Sewerage Program*		
A203-03	Training for community-based water associations to managed water supply infrastructures		
A203-04	Conduct IWRM and CCA/DRR training for vulnerable communities*		
A203-05	Develop comprehensive gender-sensitive communication strategy to raise awareness on CC impacts on water resources*		
A203-06	Develop gendered and accessible knowledge products and IEC materials that include local and indigenous knowledge on water resources management and adaptation best practices*		
A203-07	Conduct IEC using multi-media campaign, outreach programs, timely reporting of monitoring results*		
4 - Institutional Development			
A204-01	Create a Water Regulatory Commission (WRC) for regulation of water resources supply and quality management*		
A204-02	Review of National Water Resources Board (NWRB) standards for water allocation*		
5 - Public administration			
A205-01	Incorporate risks from CC&CV in water, sanitation and flood	**M205-01**	Sector reform to improve water use efficiency (e.g.

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	protection planning.		water pricing).
A205-02	Establish or strengthen water regulatory institutions and policies as instruments for adaption to CC&CV.	**M205-02**	Administration, sector studies, surveys, assessments, information systems and capacity building for energy and water use efficiency in water, sanitation and flood protection, and solid waste management.
A205-03	Establish flood warning and disaster assessment systems.		
A205-04	Assess economic, environmental or social impact of CC&CV on agriculture, forestry and fishery.		
	6 - Financing		
A206-01	Develop public financing mechanism for water supply infrastructures rehabilitation and development*		
A206-02	Study, design and implement financing mechanisms for IWRM and CCA implementation in critical watersheds and river basins*		
	7 - General water, sanitation and flood protection		
A207-01	Develop water monitoring and information systems.		
A207-02	Develop and implement equitable sharing arrangements of water resources between competing demands (agriculture, hydropower, industry and household) under CC&CV.		
A207-03	Incorporate CC&CV related factors (e.g. changes in precipitation, temperature, run-off, and evapotranspiration) in hydro-meteorological forecasts, total and seasonal water availability, water demand and water storage planning.		
A207-04	Incorporate water cycles change from CC&CV into national and trans-boundary water basin planning.		
A207-05	Design and implement conjunctive management strategies for groundwater and surface water incorporating water cycle changes resulting from CC&CV.		
A207-06	Activities with adaptation co-benefits listed under other subsectors of the Water Sanitation and Flood Protection sector for projects that span more than five sectors.		
A207-07	Improve physical system performance of river basins etc.		
A207-08	Emergency investments for climate-related natural disaster response.		
	1 - Sanitation		
A210-01	Implement monitoring and surveillance of water-borne disease incidence and other health risks due climate change*	**M210-01**	Reduce or capture methane emission from ventilated improved pit latrines.
A210-02	Expand the establishment of alternative micro-water purification systems especially to areas that cannot be reached by safe water supply*		
A210-03	Conduct water quality of groundwater sources of drinking water*		
A210-04	Incorporate changes in design of sanitation systems in response to extreme weather and flood events arising from CC&CV.		
	2 - Water Supply		
A220-01	Demand side management to respond to CC&CV by reducing water consumption or increasing water use efficiency.	**M220-01**	Reduce energy intensity of existing water supply systems (e.g. replacing pumps).
A220-02	Supply side management to respond to CC&CV by expanding supplies, reducing water losses, or improving cooperation on shared water resources.	**M220-02**	Reduce per capita water consumption using demand-side interventions (e.g. household water, shower, toilet, and dishwasher).
		M220-03	Change production techniques to reduce water consumption per unit of output produced in industry or commerce.
	3 - Rainwater Collection		
A230-01	Develop and implement guidelines for rain water collection, such small water impoundments, retarding basins, mini dams to address water shortage and flooding*		
	4 - Flood Protection		
A240-01	Retain or re-establish mangrove forests and wetlands as protection against floods.	**M240-01**	Re-establish mangroves and floodplains with carbon sequestration properties.
A240-02	Construct or strengthen polders, dykes, and embankments to protect against added risks from CC&CV.	**M240-02**	Rehabilitate land with carbon sequestration.
A240-03	Incorporate CC&CV in design standards for drainage systems.		

A240-04	Improve resilience of infrastructure (bridges, water supply, community infrastructure etc) to CC&CV related flood risks in infrastructure.		
A240-05	Promote regional cooperation on hazard and flood risk reduction.		
A240-06	Monitor impact of CC&CV as part of water resource management.		
5- Wastewater Collection and Disposal			
A250-01	Treatment of wastewater conservation/re-use purposes to respond to declines in water availability due to CC&CV.	**M250-01**	Reduce GHG emission (methane and nitrous oxide) from wastewater.
A250-02	Incorporate changes in design of wastewater treatment and disposal systems in response to extreme weather and flood events arising from CC&CV.	**M250-02**	Reduce energy consumption during wastewater treatment (e.g. from activated sludge to up flow anaerobic sludge).
A250-03	Study and adopt centralized wastewater treatment systems to improve quality in highly urbanized and densely populated areas		
6 - Irrigation and Drainage			
A260-01	Repair and rehabilitate national and communal irrigation systems (w/ climate change lens)*	**M260-01**	Introduce or expand water pumping for irrigation using renewable energy sources
A260-02	Change watershed, wetland and irrigation management systems and practices to reduce vulnerability to CC&CV	**M260-02**	Replace existing water pumps with more energy efficient pumps
A260-03	Integrated ecosystem management approaches for watersheds and wetlands to reduce vulnerability to CC&CV	**M260-03**	Replace existing diesel pumps with electric pumps
A260-04	Construct dams and water storage systems to manage changes in the water cycle due to CC&CV	**M260-04**	Revise irrigation water pricing policies to increase water use efficiency
A260-05	Incorporate risks from CC&CV in irrigation/water management planning	**M260-05**	Restore natural drainage regime that sequesters carbon
A260-06	Monitoring climate change impact to irrigation	**M260-06**	Sustainable grassland management
7- Infrastructure			
A270-01	Rehabilitate water infrastructure with climate lens (use of climate projections and other relevant climate data)*		
A270-02	Identify alternative water sources and demand management especially for urbanized areas that rely on reservoirs and are prone to recurrent and severe drought events		
A270-03	Construct new and expand existing water supply infrastructures for waterless communities*		

3 - ECOLOGICAL AND ENVIRONMENTAL STABILITY

Adaptation		Mitigation	
1 - Forestry			
1 - Policy and Governance			
A311-01	Develop and implement policy and technical guidance for a nationwide conduct of ecosystem vulnerability and risk assessment*	**M311-01**	Establish enabling policies on REDD+, integrating lessons-learned from previous legislation and aligning conflicting laws and policies among different sectors*
A311-02	Design and implement payments for environmental services and other innovative conservation financing mechanisms to support ecosystem-based adaptation and mitigation*	**M311-02**	Establish a system of monitoring, reporting and verification of REDD+ related policies and processes*
A311-03	Develop policy for the implementation of PES for PA protection, poverty reduction and CCA measures in ecotowns*	**M311-03**	Establish "polluters pay principle" for pollution management*
	Design PES scheme and pilot test identified ecotowns*		
2 - Reforestation			
A312-01	Identify and prioritize rehabilitate of degraded watersheds	**M312-01**	Close solid waste management sites in environmentally critical areas
A312-02	Conserve and protect existing watershed and protected areas		
A312-03	Identify financing options for rehabilitation activities	**M312-02**	Re-forestation and afforestation that increases vegetative cover or sequesters carbon
A312-04	Identify and delineate ecological management zones*		
A312-05	Delineate "ridge-to-reef" ecosystem-based management zones for the ecotowns through multi stakeholder process*	**M312-03**	Sustainable peat land/ wetland/forest management and protection
A312-06	Restore or maintain environmental services*	**M312-04**	Avoided deforestation
A312-07	Maintain resilience of forest systems*	**M312-05**	Prepare for carbon markets or implement carbon finance market transactions
A312-08	Maintain productivity of forest system*		
A312-09	Increased use of trees, woodlots, forests, wood and non-wood products in rural adaptation strategies		
2 – Biodiversity			
A320-01	Update status of Protected Areas and Key Biodiversity Areas from results from the vulnerability and risk assessment*		
A320-02	Establish zoning guidelines for different ecosystems based on the vulnerability and risk assessment results*		
3- Mining And Solid Waste			
A330-01	Incorporate change in design of solid waste management systems in response to extreme weather and flood events arising from CC&CV.	**M330-01**	Rehabilitate abandoned mines*
		M330-02	Identify and implement a moratorium of mining operations in protected areas pending vulnerability and risk assessment and economic valuation studies*
		M330-03	Close solid waste management sites in environmental critical areas
		M330-04	Introduce or expand compost landfill techniques
		M330-05	Upgrade existing landfills to capture methane for energy generation or gas flaring for CO2 generation
		M330-06	Strengthen institution or policies to mobilize carbon finance.
4- Natural Resource Accounting			
A340-01	Review PEENRA policy and revise as necessary*		
A340-02	Implement greening of the national income accounts*		
A340-03	Develop and implement workplace training program on ENRA and uses of ENRA in policy development*		

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4 - HUMAN SECURITY

	Adaptation	Mitigation	
1- Health			
	1 - Policy and Governance		
A411-01	Develop guidelines on treatment of climate related health issues in newly exposed areas due to CC&CV		
A411-02	Develop policy requiring integration of CC and DRR concepts and approaches in medical and allied health training courses*		
A411-03	Develop and implement Monitoring Health Infrastructure		
A411-04	Damage and Rehabilitation Plan*		
A411-05	Develop and implement a Post Disaster Epidemic Outbreak Management and Disease Surveillance System*		
	2 - Capacity Building		
A412-01	Develop and introduce health surveillance and rapid response system that reduces the health impacts of CC&CV (e.g. heat-watch)*		
A412-02	Training and education of health personnel on treatment of CC&CV related health issues		
A412-03	Upgrade health systems to respond to changes in environmental health risks from CC&CV (e.g. malaria)		
A412-04	Conduct community trainings on the public health monitoring and surveillance system*		
A412-05	Training for health emergency preparedness and response*		
A412-06	Develop CC-sensitive curricula and instructional materials for the training of health personnel and health workers*		
	3 - Public Administration		
A413-01	Assess changes in risk, exposure or sensitivity to CC&CV related diseases for vulnerable groups		
A413-02	Incorporate climate related health risks into clinical practice guidelines, and curricula for continuous medical education		
A413-03	Take anticipatory and response measures to counteract increased exposure to climate related diseases		
A413-04	Strengthen health management information management		
A413-05	Develop and implement community-based public health monitoring and surveillance system		
A413-06	Develop reporting system for early warning and timely response		
A413-07	Implement program for community health emergency preparedness and response*		
A413-08	Develop and implement a post-disaster epidemic outbreak management and disease surveillance system*		
A413-09	Develop and implement post-disaster resettlement and counselling of displaced families and communities*		
	4 - Compulsory Health finance		
A414-01	Include climate related diseases in basic benefits of insurance policies		
2 - Human Settlements			
	1-Research and Development		
A420-01	Conduct a study on population carrying capacity of areas and CC adaptive capacity of various communities*		
	2-Capacity Building		
A420-01	Develop and implement plan to secure and manage conflict-affected resettlements*		
A420-02	Identify and implement gender-responsive sustainable livelihood and social protection programs for resettled and vulnerable poor families*		
3 - Disaster Risk Reduction			
A430-01	Identify, map and profile highly disaster prone areas and		

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	communities*		
A430-02	Develop and implement a settlement adaptation and resettlement plan in consultation with affected communities, private sector, and civil society organization		
A430-03	Identify most CC vulnerable provinces, sectors and population*		
4 - Other Social Services			
A440-01	Assess impact of CC&CV on livelihoods and poverty with a focus on vulnerable groups		
A440-02	Development of proving and taxing policies supporting implementation of adaptation measures. Delivery of social services, including social infrastructure specifically designed to respond to risks caused by CC&CV		
A440-03	Cooperation with CBOs, NGOs and local government in developing and implementing adaptation measures		
A440-04	Development of social protection strategies to respond to CC&CV		
A440-05	Inclusion of adaptation measures in public works programs		
A440-06	Develop food safety/ food security measures that take account of new conditions caused by climate change. Development of market-based risk financing mechanisms		
A440-07	Development of livelihood diversification strategies to reduce dependence of climate related income opportunities		

5 - CLIMATE SMART INDUSTRIES AND SERVICES

Adaptation		Mitigation	
1- Trade And Industry			
1-Public Administration			
		M511-01	Introduce rules and regulations to reduce GHG emissions, or absorb of GHGs in industry and trade
		M511-02	Marketing/ trade policies that reduce energy consumption per unit of product
		M511-03	Introduce a system of incentives to encourage the use of climate-smart technologies and practices
		M511-04	Integrate monitoring of existing and new-climate smart industries and services within existing business registration system
		M511-05	
2-Research, Development and Extension			
		M512-01	Conduct baseline inventory of climate-smart industries and services and good practices in the country*
		M512-02	Baseline data on GHG emissions from industry and other sources
		M512-03	Forge partnerships with industry, academe, and research organizations on R&D of climate-smart technologies and products in the country
3-Capacity Building			
		M513-01	Trainings on environmental compliance monitoring
		M513-02	Develop training modules to capacitate industries to conduct GHG emissions inventory and carbon footprint*
4-General industry and trade			
A514-01	Activities with adaptation co-benefits listed under other subsectors of the Industry and Trade sector for projects that span more than five sectors.	**M514-01**	Activities with mitigation co-benefits listed under other subsectors of the Industry and Trade sector for projects that span more than five sectors.
5-Agro-industry marketing and trade			
A515-01	Marketing and trade support for changing agricultural product mix in response to CC&CV. Support new income generating opportunities utilizing natural resource better adapted to CC&CV.	**M515-01**	Marketing and trade support for products that reduce GHG emissions per unit of output. Marketing and trade support to substitute agricultural products that use inputs with lower GHG emission. Marketing and trade support for agricultural products that use integrated organic and inorganic nutrient management.
6-Other Industry			
A516-01	Support industries that are better adapted to CC&CV.	**M516-01**	Other GHG reducing measures
A516-02	Retrofit assets and capital to protect against CC&CV.		
A516-03	Incorporate new CC&CV resilient design standards.		
2 - Housing And Settlements			
1-Research and Development			
A521-01	Conduct risk and vulnerability assessment of local infrastructure*		
2-Policy and Public Administration			
A522-01	Review National Building Code and integrate climate change adaptation in national guidelines*		
A522-02	Develop green building rating scheme, specifications and criteria*		
A522-03	Introduce a system of green building certification and CC-adaptive community development certification for new		

	settlements and retrofitted buildings*		
	3-Infrastructure		
A522-01	Incorporate new CC&CV resilient design standards in new buildings.	**M522-01** **M522-02** **M522-03**	Install new heating and cooling systems using renewable energy. Retrofit heating and cooling systems in existing housing units using renewable energy. Promote energy efficient housing.
3- Small, Medium Enterprise			
		M530-01	Undertake national needs assessment on the state of eco efficiency in SMEs Review and develop integrated toolkit packages and identify training providers/ knowledge partners
4 – Tourism			
	1- Policy and Governance		
A541-01 **A541-02**	Review and implement the ASEAN Tourism Strategic Plan for 2011-2015* Adopt the 2007 Davos Declaration (Climate Change and Tourism Responding to Global Challenges)*		
	2- Research and Development		
A542-01	Establish the carrying capacity of tourism areas*		
5 - Labour And Employment			
	1- Policy and Governance		
		M551-01 **M551-02**	Develop a nationally acceptable operational definition of "green jobs"* Implement a system of collection, analysis and reporting of baseline and new data on green jobs and employment*

6-SUSTAINABLE ENERGY

Adaptation		Mitigation	
1 - Energy And Mining			
1-Public administration			
A611-01	Account for extreme weather events (wind, temperature) caused by CC&CV when planning for power system reliability	**M611-01**	Capacity building related to energy efficiency improvements in the energy sector, and promotion of renewable energy, and efficient energy pricing
A611-02	Improvements in hydro-meteorological forecasting and information tailored to energy generation under current and future climate trends as well as extreme events that will influence water storage calculations and water use, in energy generation and transmission, or energy demand profiles, transmission and generation efficiency and infrastructure integrity	**M611-02**	Administration, sector studies, surveys, assessments and information systems on energy efficiency, efficient energy pricing, and promotion of renewable energy
A611-03	Change operational management practices at power generation facilities due to CC&CV	**M611-03**	Sector reform and capacity building related to energy efficiency in energy sector, promotion of renewable energy and efficient energy pricing
A611-04	Reform to reduce risk and vulnerability to CC&CV	**M611-04**	Strengthen regulatory and institutional framework to support expansion of renewable power generation
A611-05	Capacity building or strengthening capacity for energy sector institutions to improve climate risk management in the energy sector	**M611-05**	Change operational procedures or techniques, or retrofit technologies to reduce GHG emissions in existing operations
2- General energy			
A612-01	Activities with adaptation co benefits listed under the other subsectors of the Energy sector for projects that span more than five sectors	**M612-01**	Change operational practices or technology to reduce net GHG or black carbon emissions
		M612-02	Activities with mitigation co benefits listed under other subsectors of the Energy sector for projects that span more than five sectors
		M612-03	Develop guidelines for climate-proofing of existing and new energy system
3- Energy efficiency in power			
A613-01	Taking account of climate variability and change in planning and designing future energy supply mix	**M613-01**	Rehabilitate existing power plants to decrease GHG emission intensity
A613-02	Design and application of new design criteria and technical standards in planning location, and construction of power generation facilities in order to respond to CC&CV	**M613-02**	Replace existing power plant with more efficient facility
A613-03	Reinforcement or establishment of new services for the energy and mining sectors to respond to increasing frequency in extreme climate events	**M613-03**	Improve energy efficiency in end-user –in buildings, agriculture, industry and municipal services, chillers
A613-04	Climate adaptation-related advisory services	**M613-04**	Improve energy efficiency through norms, building codes, fuel efficiency standards, regulatory support, awareness and institutional strengthening
		M613-05	Improve utility scale energy efficiency through efficient pricing, energy use and loss reduction
		M613-06	Efficient energy market operations
		M613-07	Strengthening capacity of institutions to plan for low-carbon growth and environmentally sustainable energy supply
		M613-08	Waste heat recovery
		M613-09	Reduce gas flaring
		M613-10	Dedicated finance directly or through intermediaries for promoting energy-efficiency
		M613-11	Pilot programs on above energy efficiency activities
		M613-12	Conduct a study on energy efficiency and conservation to determine the energy use reduction potential by sector and identify appropriate interventions and policies to encourage and sustain EE&C adoption
		M613-13	Develop a system of incentives for voluntary adoption of energy efficiency labelling, green building rating, and ISO 50001 certification
4 - Coal mining			
		M614-01	Substitute inputs to reduce GHG emission in

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			existing coal mining operations
		M614-02	Change operational procedures or techniques, or retrofit technologies to increase energy efficiency, conserve energy, or reduce GHG emissions in
		M614-03	existing operations
		M614-04	Improve water use efficiency in existing coal mining operations
			Coal bed methane capture for productive use
5 - Other mining and extractive industries			
		M615-01	Substitute inputs to reduce GHG emission in existing operations
		M615-02	Change operational procedures or techniques, or retrofit technologies to increase energy efficiency, conserve energy, or reduce GHG emissions in
		M615-03	existing operations
			Improve water use efficiency in existing mining and other extractive industries
6 - Oil and Gas			
		M616-01	Substitute inputs to reduce GHG emission in existing drilling and refinery operations
		M616-02	Change operational procedures or techniques, or retrofit technologies to increase energy efficiency, conserve energy, or reduce GHG emissions in
		M616-03	existing operations
		M616-04	Use of associate gas that would otherwise be flared
		M616-05	Improve water use efficiency in existing oil and gas refineries
		M616-06	Review and integrate the National Biofuels Program
			Conduct study on feasibility (performance and
		M616-07	safety) of biofuels blends in other transport system (air and sea transport)
			Conduct studies on hybrid systems (fuel cells, electric vehicles)
7- Thermal power generation			
A617-01	Improve climate resilience of thermal generation plants	**M617-01**	Install carbon capture and storage capacity in power plants
		M617-02	Replacement with lower carbon emissions technologies (such as combined cycle gas turbines in the place of coal-fired power generation)
		M617-03	DO NOT INCLUDE new thermal generation plants (including high efficiency plants)
8- Transmission and distribution of electricity			
A618-01	Incorporate effects of extreme weather events caused by CC&CV in design standards of transmission and distribution lines	**M618-01**	Rehabilitate transmission and distribution systems to reduce technical losses (DO NOY INCLUDE new or expansion of capacity in transmission and distribution systems)
A618-02	Incorporate impact of CC&CV on power system reliability assessments		
A618-03	Changes to power systems to cope with shifts in seasonal peak demand results from CC&CV	**M618-02**	Transmission and distribution capacity (new, expansion or strengthening of existing) or any new system to facilitate the integration of renewable energy sources into the grid.
9- Large hydro			
A619-01	Incorporate CC&CV related risk factors (changes in precipitation, run-off, temperature, evapotranspiration) in hydro-meteorological forecasts related to water demand for energy generation	**M619-01**	Rehabilitate existing hydropower plant
		M619-02	Construct new hydropower plant
		M619-03	Strengthen regulatory and institutional framework to support expansion of hydropower generation
A619-02	Incorporate CC&CV risk factors in assessments of total and seasonal water availability for hydropower generation and water storage		
A619-03	Water flow management throughout the hydrological cycle for hydroelectricity generation		
A619-04	Flood protection or irrigation from construction of dams or water storage system that manage changes in the water cycle		

	due to CC&CV		
		10 - Other renewable energy	
A6110-01	Improve design of turbines to withstand higher wind speeds as a result of extreme weather events	**M6110-01**	Construct or rehabilitate energy generation capacity from renewable sources other than hydropower including demonstration and pilots
A6110-02	Improve design of solar panels to withstand higher intensity storms resulting from CC&CV	**M6110-02**	Strengthen regulatory and institutional framework to support expansion of renewable energy production and use
A6110-03	Secure access to water for crops used as bioenergy source	**M6110-03**	Support renewable energy technology manufacturers or marketers through financing instruments, market analysis and other studies, awareness-raising, capacity building and pilot
		M6110-04	Conduct Renewable Energy resource assessment.
		M6110-05	Develop RE project-based and service contracts-based portfolios to encourage potential investors in identified sites
		M6110-06	Conduct survey of RE potential in off-grid areas
		M6110-07	Conduct capacity building of community-based RE organizations on RE system maintenance, EE&C organizational development, tariff setting and management systems
		M6110-08	Design and implement system of incentives for RE host communities and LGUs that can be used for sustainable livelihood programs and CCA measures
		2 - Transportation	
		1-Public administration	
A621-01	Incorporate risks from CC&CV in transportation system planning Assess economic, environmental or social impact of CC&CV on transportation	**M621-01**	Sector reform to improve energy efficiency in the transport sector
		M621-02	Capacity building related to energy efficiency in the transport sector
		M621-03	Administration, sector studies, surveys, assessments and information systems on water and energy use efficiency and shift from higher carbon to lower carbon transport modes in the transport sector
		2- Research and Development	
		M622-01	Conduct risk and vulnerability assessment of the transport system
		M622-02	Conduct technical study on the development of standards on energy efficiency labelling for vehicles
		M622-03	Review current standards for fuel quality to support clean fleet program and fuel efficiency labelling for vehicles
		M622-04	R&D in low-carbon or non-fossil fuel transport technologies.
		3- General Transportation	
A623-01	Development and application of design criteria to take account of climate change impact on transport infrastructure.	**M623-01**	Shift from high carbon to lower-carbon transport modes such as from airplanes to trains, from cars to busses, from busses to trains and from trains to bicycles and walking.
A623-02	Investments specifically responding to new climate resilient criteria.		
A623-03	Protection of transport infrastructure against extreme weather events (especially floods and storms) becoming more frequent and violent due to CC&CV.	**M623-02**	Improve traffic flow to reduce carbon emission per unit transported
A623-04	Establishment of emergency services designed to cope with CC&CV related emergencies in the transport sector.	**M623-03**	Substitution of high carbon by lower carbon or non-fossil fuel thereby reducing carbon intensity per kilometre travelled.
A623-05	Activities with adaptation co-benefits listed under other subsectors of the Transportation sector for projects that span more than five sectors.	**M623-04**	Improve vehicle emission standards.
		M623-05	Improve fuel efficiency standards.
		M623-06	Strengthen vehicle inspection systems on emissions and fuel efficiency.
		M623-07	Activities with mitigation co0benefits listed under other subsectors of the Transportation sector for projects that span more than five sectors.

4 - Rural and inter-urban roads and highways			
A624-01	Develop design standards that take account of CC&CV impacts	**M624-01**	Investment in roads and highways to improve traffic flow and reduce GHG emissions per unit transported
A624-02	Construct new roads and highways to climate resilient design standards	**M624-02**	Traffic management to reduce GHG emissions per unit transported
A624-03	Upgrade existing roads and highways to climate resilient design standards	**M624-03**	Shift to lower carbon modes of road and highway transport including research and development
A624-04	Enhance road and highway maintenance to respond to CC&CV		
5- Urban Transport			
A625-01	Develop design standards to take account of CC&CV impacts	**M625-01**	Urban traffic management to reduce GHG emissions per unit transported
A625-02	Construct new roads and highways to climate resilient design standards	**M625-02**	Shift from high carbon to lower-carbon modes of transport
A625-03	Upgrade existing roads and highways to climate resilient design standards	**M625-03**	Research and development of lower-carbon modes of urban transport
A625-04	Enhanced road and highway maintenance to respond to CC&CV		
6 - Ports, waterways and shipping			
A626-01	Develop design standards to take account of CC&CV impacts	**M626-01**	Transfer of bulk transport from roads and railways to ships as justified by reducing the carbon footprint per ton of cargo transported
A626-02	Construct new ports to climate resilient design standards	**M626-02**	Improved waterways and port facilities to reduce the carbon intensity per unit transported
A626-03	Upgrade existing ports to climate resilient design standards	**M626-03**	Research & development to reduce the GHG intensity in sea and lake bound transport operations.
A626-04	Enhanced port and waterway maintenance to respond to CC&CV.		
A626-05	Setup new waterways or change existing waterways in response to CC&CV.		
7 - Aviation			
A627-01	Develop design standards for airports, air traffic routes and other aviation infrastructure to take account of CC&CV.	**M627-01**	Reduce airport congestion before take-off and landing.
A627-02	Construct new or upgrade existing airports and aviation infrastructure to climate resilient design standards.	**M627-02**	Improvements in aviation facilities that reduces GHG emissions.
A627-03	Enhance maintenance of airport/ aviation infrastructure in response to CC&CV.	**M627-03**	Introduction of lower carbon aviation technologies.
		M627-04	Shift from high carbon to lower-carbon transport modes.
		M627-05	Reduction of carbon-content in aviation infrastructure facilities.
8 – Railways			
A628-01	Development and application of new design criteria to take account of climate change impact on rail infrastructure.	**M628-01**	New railway lines for electricity based railcars.
A628-02	Investments specifically responding to new climate resilient criteria.	**M628-02**	Convert diesel or coal railcars to electric.
A628-03	Protect railways against extreme weather events (especially floods and storms) becoming more frequent and violent due to CC&CV.	**M628-03**	Introduce lower carbon engine/vehicle technologies.
		M628-04	Improve and expand rail networks, locomotives and wagons to reduce GHG intensity per unit of transported (good and people) e.g. introduction and expansion of high speed trains.

7- KNOWLEDGE AND CAPACITY DEVELOPMENT

Adaptation		Mitigation	
1 - Education			
1- Public administration			
A711-01	Capacity building to address vulnerability to CC&CV		
A711-02	Review of curricula to take account of climate aspects in basic education, vocational training and other forms of follow-up training and education		
A711-03	Review and revise, as necessary, current textbooks, modules and exemplars for pre-elementary, elementary, high school and alternative learning system for CC content and gender-sensitivity		
2 - Adult literacy/non-formal education			
A712-01	Awareness raising programs on CC&CV.		
3 - Primary and Secondary Education			
A713-01	Development of Climate-adaptation focused curricula or programs.	**M713-01**	Development of curricula or programs focused on reducing GHG emissions, energy consumption or water consumption.
4 - Tertiary education			
A714-01	Development of Climate adaptation focused curricula or programs.	**M714-01**	Development of curricula or programs focused on reducing GHG emissions, energy consumption or water consumption.
A714-02	Develop climate change science college and graduate curricula and courses	**M714-02**	Support research on mitigation.
5 - Vocational Training			
A715-01	Train for new business opportunities created by CC&CV	**M715-01**	Train workers in GHG emission reducing activities
A715-02	Train for adapting to and coping with climate change (e.g. ecosystem based adaptation)		Train managers or workers to improve water or energy efficiency in business operations Train managers/ workers in GHG reductions in business operations
2 - Information Technology			
A720-01	Development of emergency response systems for use during extreme weather events.	**M720-01**	Improve energy efficiency in information technology.
3 - Telecommunications			
1- General Information and Communications			
A731-01	Development of telecommunications infrastructure for use as part of an emergency response system during extreme weather events.	**M731-01**	Improve energy efficiency in telecommunications information technologies.

8- FINANCE

Adaptation		Mitigation	
	1- General finance		
A810-01 **A810-02**	Analysis of impact of CC&CV on long-term growth, and poverty Activities with adaptation co-benefits listed under other subsectors of	**M810-01**	Activities with mitigation co-benefits listed under other subsectors of the Finance sector for projects that span more than five sectors
	2-Public administration		
A820-01 **A820-02** **A820-03**	Fiscal policy and management measures in support of adaptation Economic research, modelling and policy making for adaptation Economic analysis of financial needs for adaptation to CC&CV (cost of adaptation)	**M820-01** **M820-02** **M820-03**	Fiscal policy and management measures in support of mitigation Economic research, modelling and policy making for mitigation Reduce fossil-fuel consumption through taxes, levies or fees on energy or transport services
	3- Banking		
A830-01	Introduce regulations and programs to support climate resilient investments	**M830-01**	Introduce regulations, programs or financial instruments to support GHG reducing activities
	4- Non-Compulsory Health Finance		
A840-01 **A840-02**	Include climate related diseases under the basic benefit packages of health insurance policies Expand insurance eligibility to populations vulnerable to climate related diseases	**M840-01**	Introduce regulations, programs or financial instruments to support GHG reducing activities
	5- Housing finance and real estate markets		
A850-01 **A850-02**	Incorporate vulnerability to CC&CV in housing design standards Regulate or provide incentives in housing finance to discourage settlements in areas vulnerable to CC&CV	**M850-01**	Regulate or provide incentives in housing finance to support energy saving designs and standards
A850-03	Regulate or provide incentives in housing finance to encourage upgrading of existing real estate that reduces vulnerability to CC&CV		
	6 - Non compulsory pensions, insurance, and contractual savings		
A860-01	Develop and introduce weather or climate indexed insurance programs (e.g. crop insurance)		
	7 - SME Finance		
A870-01	Ease access to finance targeting adaptation to CC&CV by microfinance institutions	**M870-01**	Provide lines of credit for investments in reduction of GHG emissions and/or absorption of GHGs Support SMEs to reduce GHG emissions and/ or absorption of GHG Support to access carbon markets
	8 - Microfinance		
A880-01	Ease access to finance targeting adaptation to CC&CV by microfinance institutions	**M880-01** **M880-02** **M880-03**	Credit lines for investments in reduction of GHG emissions and/or absorption of GHGs Support to SMEs to reduce GHG emissions and/or absorption of GHG Support to access carbon markets
	9 - Capital markets		
A890-01	Introduce green bonds or other securities specifically targeted at adaptation to CC&CV	**M890-01**	Introduce green bonds or other securities specifically targeted at reducing GHG emission or sequestering GHGs

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