Greater Mekong Subregion Climate Change and Environmental Sustainability Program (CCESP)

GMS Consultation Workshop on CCESP Demonstrations

PROGRAM ANNEX: Initial Ideas and Potential Demonstrations

Priority Theme	Initial Ideas	Potential Demonstrations
1. Climate and disaster resilience enhanced	Rural communities in the GMS are on the frontline of climate change and are most vulnerable to losses and damages. Many communities lack the resources and capacity to deal with these challenges. Piloting of innovative gender-responsive community resilience projects need to be carried out in the GMS to translate knowledge into effective responses to climate and disaster risks that build sustainability and adaptive capability (especially for those most at risks such as women, girls and other excluded groups), and inform the integration of climate change considerations into community-level planning.	Develop sustainable agroforestry and alternative livelihoods including mechanisms for local financing and savings to support production, value addition, and links to markets Application of technologies for adaptation to climate change, including early warning and forecasting services, disaster prevention capabilities, etc.
2. Low carbon transitions facilitated	• Climate smart and low carbon agriculture • Green village with renewal energy (solar energy) and sustainable waste management recycling • Promoting private sector in tree planting and agroforestry	Agriculture residue management for energy or compost production *(Cambodia, Lao PDR, or Viet Nam)* Transportation of agriculture products shifted from diesel trucks to rail – first and last mile

	• Improved capacity in restoration of degraded areas in the protected area, PA demarcation and registration • Energy capture from agricultural waste • Carbon capture in carbon sinks or direct carbon capture from large emitters	transportation options to the long-haul rail transport *(Cambodia)* Demonstrating the tiny forests carbon sink concept *(Cambodia)* Promoting circular economy in management of agricultural residue in cashew plantation *(Viet Nam)* Methane gas capture from agriculture waste or landfills *(Lao PDR)* Carbon capture from large sources – coal fired power plants *(PRC)* Smart grid in a residential block or with a production facility *(PRC)* Sustainable living capacity building among women *(Thailand demonstration proposal developed)* Replacement to efficient electrical equipment, lighting, cooling, cooking *(all GMS countries)* Bio-digesters, enzymes and other accelerators for transformation of biowaste *(all GMS countries)* Solar-powered village

3. Climate-smart landscapes promoted	• Cambodia-Thailand Transboundary Climate-Smart Landscape Management in Banteay Chmar Protected Landscape • Cambodia-Viet Nam-Laos Transboundary Climate-Smart Landscape Management in Vireakchey National Park	Sino-Vietnamese Climate-smart Cross-border Biodiversity Landscape Management *(PRC)* China-Laos Transboundary Climate-Smart Landscape Management Demonstration Project *(PRC)*

4. Environmental quality through pollution control and waste management enhanced	**1. Air pollution due to unsustainable agricultural waste management – burning of agriculture residues**
	• Alternative practice to crop burning: PUSA Bio-enzyme, Enabling sustainable uses of crop residues
	• Low-cost AQ sensors at Air Sensitive Receptors (ASR) to verify the reduction of air pollution
	• Satellite mapping by A.I. (es. tool GALAGO, to:
	  ○ verify the reduction in fires
	  ○ identify fires as sources for SHAIR
	• Smart (AI) modelling system integrating monitoring data to predict air quality levels at air sensitive receptors
	
	2. Water pollution due to chemicals from agriculture and industries and to plastics: Real-time sensor monitoring
	Use of information and communications technology to perform efficient and real-time monitoring of water quality, predict future trends of water quality (toxic chemicals as well as microplastics), and provide rapid responses to toxic events (e.g., harmful algal blooms, PFAS) in water resources.
	
	3. Soil pollution due to indiscriminate use of nitrogenous fertilizers and other chemicals in rural areas as well as in urban and peri-urban agriculture
		Circular Economy in Action with Sustainable Food Waste Management Implementation (Reducing Food Waste through Integrated Closed-Loop Food System in Bangkok or WASTEGETABLE)
		(Thailand)
		
		Promoting plastic bag charging in retail chains *(Viet Nam)*
		
		Waste Separation At Source: The Piloted Model for Vinhomes Smart City in Ha Noi *(Viet Nam)*
		
		3Rs Demonstration Towards Zero Plastic Waste and Recycling *(Cambodia)*

	Use of calcined sepiolite in removing phosphate from water and returning phosphate to soil as phosphorus fertilizer. **4. Management of plastic pollution due to COVID-19** Building on the guidelines for improving local waste collection systems of the 25+ACR Association to manage COVID-19-related waste management. **5. Plastic waste management – ReThinkWaste** Rethink municipal tariff systems to improve urban waste government. **6. Circular economy and toxic waste management** Check the regulatory fate of recycled material containing hazardous substances in the product cycle, which could potentially lead to risks for human health and the environment. Manage the presence of substances of concern in waste and recycled materials, and their potential adverse effects on human health and the environment. **7. Circular economy: 8 actions to cut 60% CO2 in the buildings sector**	
5. Digital technologies for climate action and environmental sustainability	• Drone technology to monitor forest in protected areas • Application of smart phone for earlier warning or waste reporting	Application of drones for mapping waste disposals and industrial pollution projection Deep machine learning for disaster risk assessment and post recovery planning

6. Innovative climate and disaster risk financing instruments demonstrated	• Carbon capture in carbon sinks or direct carbon capture from large emitters • Improving access to innovative climate and disaster risk financing (CDRF) for climate smart agriculture (CSA) and climate smart village (CSV) initiatives • Exploring risk retention, risk sharing, and risk transfer schemes • Collaborative and technologically innovative CDRF strategies	Exploration and upscaling of community-based disaster risk financing initiatives Development of, and increased financial access to, index-based insurance schemes Hazard mapping, remote sensing, GIS, and other innovative CDRF instruments Increasing access to data and facilitating regional collaborations in the GMS