



RESEARCH PROGRAM ON
**Climate Change,
Agriculture and
Food Security**



**CGIAR Research Program on
Climate Change, Agriculture and Food Security (CCAFS)**

**Workshop on Mapping out a CCAFS R4D Agenda and Strategy for
Southeast Asia**

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Workshop on Mapping out a CCAFS R4D Agenda & Strategy for Southeast Asia

- Sponsors:** CCAFS Regional Program for Southeast Asia (CCAFS-SEA), International Rice Research Institute (IRRI), International Research Center for Tropical Agriculture (CIAT) and Vietnam Academy of Agricultural Science (VAAS)
- Participants:** NARS partners, CGIAR CCAFS focal persons and selected donors
- Date/Venue:** 12-14 March 2014; Hanoi, Vietnam

Context and Rationale

Taking off from the convergence meeting of CGIAR Centers and selected partners in December 2013, this regional workshop mapped out a CCAFS R4D agenda and strategy for Southeast Asia (SEA). The region was added to the CCAFS portfolio (East Africa, West Africa, South America, South Asia) in order to make the program fully global. Based on the criteria of complementarity to existing regions, mitigation potential, innovation potential, vulnerability and institutional support, SEA was ranked first overall over other target regions except for vulnerability and institutional support, for which it was ranked second (Thornton and Förch, 2011). Parts of Lao PDR, Cambodia and Vietnam have significant vulnerable hotspots which could be considered as benchmark sites for the program.

Among others, the SEA Regional Program defines the strategic directions of CCAFS in the region, communicating them clearly and transforming them into work plans and budgets in collaboration with Flagship Leaders. Likewise, it provides regional program coordination, overseeing research in a specific region from participating Centers and coordinating actions that leads to coherent implementation of activities in SEA. Moreover, CCAFS-SEA assists in implementing the CRP in a coordinated manner across themes and regions to ensure outcomes and impacts, including contributing to synthesis of products and activities. It also implements a number of core activities with partners to contribute to research outputs critical to achieving goals and regional priorities.

Spread across archipelagos, river basins and forests, SEA is home to some of the world's most significant natural and cultural diversity. However, with much of the population and infrastructure located in coastal and river deltas, hundreds of millions of people are at great risk from the impacts of climate change. This could

be exacerbated by the region's rapid economic growth, expected to more than double by 2030.

Climate change in SEA is projected to have significant variations in rainfall patterns, increased incidence of severe weather events, higher temperatures and sea-level rise in many highly populated areas. These changes will adversely affect agricultural yields, biodiversity, forest harvests and availability of clean water (ADB, 2009). Of the seven Asian countries most vulnerable to climate change, three are in SEA (Cambodia, Lao PDR and Myanmar).

Due to climate change, crop yields in 2050 will decline from 2000 levels by up to 20 percent for rice, 13 percent for soybean, 16 percent for wheat and 4 percent for maize in East Asia and the Pacific (IFPRI/ADB, 2009). It is also important to consider that SEA is a global hotspot for agricultural emissions, particularly from rice and deforestation (Smith et al 2007/IPCC 2007). Oil palm, in particular, has been a major driver of deforestation globally and particularly in Indonesia.

On the problem of agricultural emissions, particularly from rice, through interventions such as water management, efficient use of nitrogen and management of organic residues, the methane emissions from eligible paddy rice systems can be reduced by about 30% while often enhancing food yields, and saving water, fertilizer and energy (Wassmann et al. 2010).

For oil palm, there is now a strong demand from consumers in some countries for sustainable palm oil and the growing global commitments to avoid deforestation have created momentum for countries to protect forest carbon. Sustainability commitments from oil palm growers and accountability systems for deforestation offer opportunities for reducing agriculture's role as a driver of deforestation.

Reporting on the anticipated impacts of climate change on agriculture and food security in the region, the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA, 2013) identifies knowledge gaps and research needs in SEA as follows:

1. Better understanding of climate change, its impacts and potential strategies.
2. Baseline socio-economic information of vulnerable farmers and communities.
3. Improvement of local forecasting capability, synthesis and full utilization of available information and identification of key knowledge gaps.
4. Information on the possible strategies and technologies for crop and livestock management, along with the effects of interaction of different strategies and trade-offs into development and food security programs.
5. Mechanism for information sharing and management across sectors and limited awareness of climate change issues by stakeholders, particularly

farmers.

SEARCA adds that the documentation of current and indigenous adaptation strategies to climate-related extremes is needed to serve as the basis for developing effective and efficient local adaptation practices and technologies. Likewise, it is very critical that the effects of climate change be understood at the local and national levels to enhance the ability to select or apply appropriate methods and tools prepared for adaptation and mitigation.

From the foregoing, CCAFS needs to develop a regional R4D strategy and agenda involving NARES Partners, CGIAR Centers, civil society and selected donors. The regional strategy and agenda will operationalize CCAFS's four flagship programs and help pursue the five intermediate development outcomes of the program in SEA.

Objectives

The three-day workshop had the following objectives:

1. Scan contemporary challenges, opportunities and state of climate change and its major impacts on agriculture and food security in SEA.
2. Assess the complementation and synchronization of current climate change R4D initiatives among CGIAR Centers and NARS in the region.
3. Identify cutting edge knowledge, information and policy gaps on climate change in the region.
4. Map out a regional R4D agenda and strategy for CCAFS-SEA in the next three years.
5. Draw up an impact pathway for climate change R4D for SEA.

Results

Opening Program

The program was opened by, and a keynote address provided by His Excellency Le Quoc Doanhy, Vice Minister, Vietnam Ministry of Agriculture and Rural Development. LS Sebastian, CCAFS regional program leader for Southeast Asia, provided an overview of the workshop and briefing on the CCAFS program in the region.

NARS Presentations of Climate Change R4D in SEA

The session was moderated by **Rod Lefroy,...**

The following presentations on climate change research for agricultural development were made:

Vietnam	Le Hoang Anh
Cambodia	Ty Sokhun
Lao PDR	Khamphone Mounlamai
Myanmar	Khin Myat Nwe
Philippines	Mercy Sombilla
Indonesia	Fahmuddin Agus

These presentations allowed the participants to understand the current situation in the CCAFS SEA countries, as well as current research being conducted on the issue of climate change and agriculture in national agricultural research services and other stakeholder organizations.

Related Presentations of Climate Change R4D in SEA

The session was moderated by **Rex Navarro,...**

The following presentations on climate change research for agricultural development in the CGIAR were made:

CC & Ag. R4D Agenda for SEA: Learning From Past Workshops	Pramod Aggarwal, CCAFS SA
Adapting the CCAFS CSV for SEA	Julian Gonsalves, IIRR
Climate Change Related Gender Issues in SEA	Thelma Paris
Climate Change a& Crop Suitability in SEA	Rod Lefroy, CIAT
State of Climate Information Services in SEA	Ruby Rose Polycarpio, RIMES
Status and Challenges of Weather Based Insurance in SEA	Christopher Coe/ AON Benfield
Opportunities for Low Emission Landscapes in SEA	Lini Wollenberg, CCAFS

These presentations allowed the participants to understand the research being conducted on the issue by stakeholders in the CGIAR, as well as to develop an understanding of research results currently available.

During the following two days the participants focused on revising the draft impact pathway for CCAFS SEA from the Convergence meeting of CGIAR Consortium Centres and selected partners and donors that was held in December 2013.

CGIAR-NARS R4D Agenda for Climate in SEA According to CCAFS Flagship Themes

The work began with an orientation for participants. LS Sebastian presented the

draft CCAFS SEA regional impact pathway that came out of the December 2013 conversion workshop. Then Christine Jost, CCAFS Science Officer for Linking Knowledge to Action, gave a presentation on outcomes thinking, concepts and approaches highlighting the work on the impact pathway that needed to be done and why the changes were necessary. These included:

- Creating one outcome per CCAFS flagship
 - Climate smart agricultural practices
 - Enhanced climate information services and safety nets
 - Policies and practices for low-emissions agriculture
 - Policies and institutions for climate-resilient food systems
- Identifying actions within the CCAFS mandate
- Mapping current projects to outcomes through milestones

Participants then broke into working groups, where they stayed for the remainder of the workshop:

- Flagship 1 Group: Climate-smart agricultural practices- Lead: Felino Lansigan, Rapporteur: Dindo Campilan & Madonna Casimero
- Flagship 2 Group: Climate information services & climate-informed safety nets- Lead: Rizaldi Boer, Rapporteur : Asa Sajise
- Flagship 3 Group: Mitigation via low-emissions agricultural development- Lead: Mai Van Trinh, Rapporteur: Gina Aljacara
- Flagship 4 Group: Policies & institutions for resilient food systems- Lead: Ty Sokhun, Rapporteur: Ioannis Vasileiou

The leaders of the four CCAFS flagship areas of research joined their respective working groups face-to-face or by Skype, and presented the vision, theory of change, expected outcomes and priority focus areas of their respective flagships to the group members. Then the groups got to work.

Identifying next-users in SEA for each flagship

Participants discussed the CCAFs impact targets and SEA vision statement:

CGIAR SLOs

- Less rural poverty;
- Better food security;
- Better nutrition and health; and
- Sustainably managed resources.

CCAFS IDOs:

- Increased and stable access to food commodities by rural and urban poor (“Food security”).
- Increased control by women and other marginalized groups of assets, inputs, decision-making and benefits (“Gender and social differentiation”).

- Increased capacity in low-income communities to adapt to climate variability, shocks and longer-term changes (“Adaptive capacity”).
- Additional policies and institutions supporting sustainable, resilient and equitable agricultural and natural resources management developed and adopted by agricultural, conservation and development organizations, national governments and international bodies (“Policies and institutions”).
- Increased carbon sequestration and reduction of greenhouse gases through improved agriculture and natural resources management (“Mitigation”)

CCAFS SEA Vision Statement

“The region has a stable food supply, with consumers, particularly rural and urban poor, having adequate access to food commodities. Farmers and communities practice climate-smart technologies and are resilient to climate change. Institutional capacities and capabilities of the public and private sector in implementing climate change measures are strong. Climate change adaptation and mitigation measures are integrated in regional and national development plans. These leads to more resilient agriculture in the region with a reduced contribution in GHGs.”

Then they identified the next-users in SEA (boundary partners that can create an environment that enables the target impact for end-users, decision-makers that CCAFS needs to influence) associated with that vision.

SEA flagship outcomes

Participants considered the list of next-users they had generated for their flagship, and identified practice changes that would allow these next-users to create an enabling environment for achieving the CCAFS SEA vision. For this work the flagship 1 group split into two sub-groups.

Tables 1-5. Next-users by group indicating practice changes necessary for achieving the CCAFS SEA vision.

Table 1. Flagship 1 Group 1 (focusing on CSA practices)		
Next-user Group	Specific next-users in the group	Necessary practice change
Advisory groups	Agricultural extension workers, veterinary and livestock officers, agro-meteorological advisors, regional NARS research stations	Need to seek, access, and better understand and tailor the information and appropriate climate smart technologies to specific needs of stakeholders, considering gender balance and the marginalized and vulnerable groups
Sub-national governments	Regional, Provincial, district, township agricultural executive officers (agriculture, risk management)	Increased awareness and enhanced capacity on climate risk management as well as potential to adapt to climate change; and improved governance through more participatory planning and assessment incorporating evidence/knowledge based information, gender concerns, and using appropriate planning and decision (GIS, mapping, risk analysis, gender analysis, M&E)
SMEs (that provide inputs and services)	Millers/traders, specialization companies	Initiate/develop innovative agri-business enterprise (new, high value food products);
Academic institutions	Schools and universities	Labeling and marketing of climate smart products and inputs Inclusion of climate-smart technologies etc., in the curricula
Farmer associations	Fishery, farmers and veterinary, irrigation associations,	Strengthened capacity to help farmers diversify for reduced risks and better nutrition
Non-government organizations	International and local NGOs, religious groups	Promote, invest on CSA and its upscaling through CSV approach
R and D institutions	International and national institutions, philanthropist	Strengthened capacity and tools for research and development on CSA

Next-user Group	Specific next-users in the group	Necessary practice change
Finance and credit	informal loan providers, traders,	Enhanced incentives to support CSA application Improved access to credit
Farm Input providers	Fertilizer and pesticides, machine, seeds, feeds, fingerlings	Enhanced capacity to provide knowledge-based advisories on more efficient use of inputs

Next-user group	Specific next-users	Necessary practice change
Private Sectors	Input Suppliers	Ensure supply of Climate Tolerant (Multi Hazard) Seeds/ Inputs, Sustainable Fertilizer Management
	Wholesalers (Output)	Engage/Participate in marketing climate tolerant products (e.g. submergent/ drought tolerant products) - Labeling and certification to differentiate climate smart products
	Processors	Improve quality/ process of processing of climate tolerant products
	Retailers (Output)	Engage/Participate in marketing climate tolerant products, Educate consumers on advantages of climate "smart" products
	Research Companies	Adopt "green"/ "climate smart" methods/ lens in private research
	Microfinance (Formal)	Provide credit facilities for adoption/ support of "low-emission"/ "climate smart" - Incorporate climate risk in feasibility studies
	Microfinance (Informal)	Provide credit facilities for adoption/ support of "low-emission"/ "climate smart" - Incorporate climate risk in feasibility studies
	Crop Insurance	Incentive (lower premiums, subsidy) for use/ practice of "low

Table 2. Flagship 1 Group 2 (focusing on adaptation planning and scaling)

Next-user group	Specific next-users	Necessary practice change
		emission"/ "climate smart"
Policy Makers	National Local/Provincial Sectoral Agriculture Natural Resource Economic Planning	Institutionalize in the budget system allocation for "climate smart"/ "low emissions" that favors and reaches local level planning (e.g. innovative funding scheme/ windows) Promote and embrace, guide/ observe, and implement local green development (e.g. landscape/ land use planning that is resilient/ responsive to hazards) Move away from commodity/ crop based planning/ policy (i.e. encouraging mono-crop farms) and towards integrated (i.e. mixed/ diversified farms) and pro-poor planning/ policy review natural resource development plans - coordinate with agriculture departments - promote landscape approaches Implement CBA of adaptation options vs BAU to analyze trade-offs between options - Allocate money for adaptation
	Disaster Risk Management Climate Change Committee	Adopt precautionary principle (risk assessment, damage assessment) in disaster risk management - Improve weather forecasting/ projection - Coordination/ interaction between adaptation community (climate smart agriculture) and DRRM community Coordination/ interaction between adaptation community (climate smart agriculture) and DRRM community
Regulatory Agencies	Land Administration Forest Protection	Strengthening enforcement, monitoring (regularly update data on land use) of land-use planning Environmental education (inform communities of relationship between mitigation and biodiversity)

Table 2. Flagship 1 Group 2 (focusing on adaptation planning and scaling)

Next-user group	Specific next-users	Necessary practice change
Extension Services	Agriculture/ Livestock	Teach farmers use of climate tolerant (multi hazard) technologies, sustainable fertilizer management (livestock and crop), alternative feed and fodder banks - Shift orientation (re-educate) to agriculture-forestry systems vs. pure forest trees
	Aquaculture/ Fishery	Promote semi-intensive and extensive systems of fish production vs. intensive systems - Inform communities/ stakeholders environmental services of mangroves (natural barriers, carbon sinks, etc.)
	Forestry	Recognize importance/ value of fruit trees in integrated/ agroforestry systems - Shift orientation (re-educate) to agriculture-forestry systems vs. pure forest trees
Research Institutes	Scientists/ Researchers	Use of benefit transfers from other researches (i.e. apply outcome/ results from other studies) - Strengthening and building human resources to undertake integrated natural resource management - Emphasize/ Adapt R4D approach
Academic Institutes	Scientists/ Researchers	Mainstream climate change concerns and solutions as a cross cutting theme in curriculum
NGOs	International	Incorporate community based adaptation in their regular programs and provide technical support for these programs
	National (Country based and operated)	Improve linkage and capitalize on possible synergies with other institutions (e.g. research and academic institutions)
Donor	Global (UN)	Better relations and harmonization of efforts and funding to avoid duplication and have efficient and more targetted use of funding

Table 2. Flagship 1 Group 2 (focusing on adaptation planning and scaling)

Next-user group	Specific next-users	Necessary practice change
	Bilateral	Stronger commitments from both parties to use money for climate change activities that is sensitive to country specific needs/ situation and enhance capacities of local academic institutions for this work
Farmer Organization/ Association	Water User Groups	Use/ apply integrated water management systems and water saving technologies
	Farmer Interest Group	Use/ apply "climate smart" technologies/ farming systems - Have communication and knowledge sharing platforms for climate change at farmer group level
	Agribusiness/ Marketing Cooperatives	Adapt responsible business/ marketing practices that accounts/ recognizes environmental integrity/ protection
Media	Mass Media	Communicate information about "climate smart" agriculture to farmers (primary users) through dedicated media channels (i.e. dedicated tv and radio channels) and translated to local language
	Internet/ Social Media	Communicate information about "climate smart" agriculture to extension and local agencies (primary users) and translated to local language
	ICT (Mobile Phones)	ICT providers develop and possibly subsidize applications that provide climate and market information to support farmer decision making - Service providers should improve connectivity in remote rural areas - Improve access to phones and develop subscription plans that is sensitive to rural settings

Table 3. Flagship 2

Next-user group	Specific next-user	Necessary Practice Change
Government	<p>Central govt. Extension services. Agr/Livestock/Forestry/Aqua</p> <p>Local. Extension services. Agr/Livestock/Forestry/Aqua</p> <p>Local government</p> <p>National Meteorological Services LAO, KHM, VNM, Ministry of Agriculture</p> <p>National Research Institutes</p>	<p>Evaluate current climate services to determine if meets needs of next users.</p> <p>Expand climate services/products to meet user needs.</p> <p>Disseminates climate services/info/data to users.</p> <p>Creates/maintains an enabling environment (laws/decrees)</p> <p>Builds/maintains/retains capacity of extension workers.</p> <p>Allocates/mobilizes resources to act in response to need (climate impact)</p> <p>Sharing of good practices. Establish mechanism(s) and encourage communication & coordination</p> <p>Facilitate increased role of private sector [laws, subsidies, etc]</p>
Regional Institutions	ASEAN Tech Working Groups	<p>Sharing of good practices. Establish mechanism(s) for enhancing exchange of info across ASEAN member states. 1) extension workers 2) NMHS</p> <p>Advocate for access to current technologies to be utilized [e.g. ASEAN Climate Outlook Forum –seasonal forecasts increased spatial and temporal resolution]</p> <p>Encourage communication & coordination.</p>

Table 3. Flagship 2		
Next-user group	Specific next-user	Necessary Practice Change
Civil Society	Local NGOs, non-profit, profit	Establish partnership with govt to increase effectiveness, sustainability of use of climate services/info/data. Play role in evaluating effectiveness of climate services Increase capacity to deliver technically sound outputs to their users (climate and agr/aqua/livestock)
	International NGOs Farmer's associations (farmer coop/grp)	Increased interaction/collaboration with universities, research inst, NMHS. Increased role to bridge user –producer gap. Establish and maintain capacity to translate / deliver farmer needs to data producers.
Private sector	Input suppliers – fertilizer, seeds,	Increased private sector involvement in dissemination process. Adapt / tailor products to better meet user needs.
	IT, telecoms	
	Retailers, markets	Increase forward looking / visioning
	Insurance	Incorporate climate service/info in design of products [e.g. incorporate climate criteria in loan decisions]
	Banks, MFIs	[e.g. Use insurance for loan collateral]
	Market Federation, chamber commerce	Identify ways to increase engagement / contributions [e.g. mechanisms to reduce premium cost – enlarge pool Economies of scale] [e.g. Nepal Chamber of Commerce – role in retail price reporting]
Development	UN agencies	Make greater use of climate services to ID vulnerable areas

Table 3. Flagship 2

Next-user group	Specific next-user	Necessary Practice Change
Partners	(FAO, WFP, UNDP) Development Banks (ADB, WB, IFAD)	and/or populations. Use climate data more effectively when managing disaster risk reduction / relief efforts Consider climate info in loan decisions. [more forward looking, greater time to gather info] Increase risk profile. [underspending on climate] Reasonable costs (time/effort) for govts to access funds
academic	Universities (meteorology, agriculture, forest, aqua, livestock) Institutes (Policy research etc) Student association	Increased interaction with extension services for setting priorities in applied research– e.g. climate products, agr, agro-met. Short term: curriculum to build capacity of ext workers / local govt agencies to use climate services Medium term: exchange students across AMS (e.g. SEAMEO certification courses) Long term: exchange students across AMS (MA/PhD). Support establishment of national Research center(s) on CC
media	TV, radio, newspapers, magazine, online	Reports: Increased spatial resolution / geographically specific TV breaking news: weather/climate [e.g. LAO - Community speaker system] Develop other TV program types to inform about use of climate services, Play role in sharing of good practices. Increased collaboration between AMS media networks

Table 4. Flagship 3				
Next-user Group	Specific Next-Users			Necessary Practice Change
	Plantation/Reforestation	Rural Development	Quantification	
<i>Ministries National Level Committees/Groups responsible for mitigation in terms of plantation/reforestation, rural development and quantification</i>	Ministry of Planning and Investment (Vietnam) Ministry of Planning (Cambodia)	Ministry of Planning and Investment (Vietnam) Ministry of Planning (Cambodia)	Ministry of Planning and Investment (Vietnam)	Greater capacity to implement CSA, GHG reduction (in terms human and financial resources) - Planning and implementation for agriculture and GHG reduction
	Prime Minister (Lao)	Prime Minister (Lao)		
	Inter-ministerial committee - Agriculture - Environment/climate office	Inter-ministerial committee (Lao) - Agriculture - Environment/climate office	Inter-ministerial committee (Lao) - Agriculture - Environment/climate office	Set priority and allocate resources for CSA
	Ministry of Environment (Lao) Ministry of Natural Resources and Environment (Vietnam) Forestry Administration (Cambodia) Department of ENR (Phil) MOF (Indonesia)	Ministry of Environment (Lao) Ministry of Natural Resources and Environment (Vietnam) Forestry Administration (Cambodia) Department of ENR (Phil) MOA and MOF (Indonesia)	Ministry of Environment (Lao) Ministry of Natural Resources and Environment (Vietnam) Forestry Administration (Cambodia) Department of ENR (Phil) MOA and MOF (Indonesia)	
Ministry of Agriculture and Rural Development (Vietnam) Ministry of Agriculture, Forestry and Fishery	Ministry of Agriculture and Rural Development (Vietnam) Ministry of	Ministry of Agriculture and Rural Development (Vietnam) Ministry of		

Table 4. Flagship 3

Next-user Group	Specific Next-Users			Necessary Practice Change
	Plantation/Reforestation	Rural Development	Quantification	
<i>Subnational government structures responsible for mitigation</i>	(Cambodia) MOA (Indonesia) Departments of Agriculture, and Science and Technology (Phil)	Agriculture, Forestry and Fishery (Cambodia) MOA (Indonesia) Department of Agriculture, and Science and Technology (Phil)	Agriculture, Forestry and Fishery (Cambodia) MOA (Indonesia) Department of Agriculture, and Science and Technology, CCC (Phil)	Increase capacity of policy makers and planners to <ul style="list-style-type: none"> - Plan (short and long-term) based on specific area condition - implement plans - mainstream/integrate cc mitigation to economic development process
	National Steering Committee (Lao) Cluster on Climate Change Adaptation and Mitigation (Phil)	National Steering Committee (Lao)	National Steering Committee (Lao) Cluster on Climate Change Adaptation and Mitigation (Phil)	
	Technical Working Group on Agriculture, Forestry and Land Use (Lao)	Technical Working Group on Agriculture, Forestry and Land Use (Lao)	Technical Working Group on Agriculture, Forestry and Land Use (Lao)	

Table 4. Flagship 3			
Next-user Group	Specific Next-Users		
	Plantation/Reforestation	Rural Development	Quantification
	Municipal and City Government Units (Phil)	Municipal and City Government Units (Phil)	Municipal and City Government Units (Phil)
			<p>Increase capacity of policy makers and planners to</p> <ul style="list-style-type: none"> - Plan (short and long-term) based on specific area condition - implement plans - mainstream/integrate cc mitigation to economic development process
			<p>Set priority and allocate resources for CSA</p> <p>Capacitate producers (in terms of technology-adoption), extension service workers</p>
<i>Donors/Investors</i>	Donors/Devt Partners (UNDP, FAO, WB, ADB,	Donors/Devt Partners (UNDP,	Donors/Devt Partners (UNDP,
			<p>Set priority and allocate resources for CSA</p> <p>Capacitate producers (in terms of technology-adoption), extension service workers</p> <p>Allow people to decide</p>

Table 4. Flagship 3			
Next-user Group	Specific Next-Users		Necessary Practice Change
	Plantation/Reforestation	Rural Development	
	Norway, IDRC, USAid, GIZ, EU, Korea, etc)	FAO, WB, ADB, Norway, IDRC, USAid, GIZ, EU, Korea, etc)	(support bottom-up planning) Feedback on policy of government Allocating more resources for mitigation research and outcome Promote technology exchange (with developed countries)
<i>Development Partners/Investors for mitigation</i>	Private Companies (e.g., Oil palm companies/producers association, rubber companies/association, smallholders association, Malaysian Palm Oil Board, Round Table on sustainable palm oil)	Private Companies (e.g., Unilever, export companies in collaboration with Japanese companies, rice biogas processing, fertilizer companies, certification for sustainable timber and non-timber)	Expand CSR Conform to government rules and regulations Participate in NAMAs (in terms of technical outreach) Design training (envi-friendly) programs for producers
<i>Civil Society</i>	Local and international NGOs (e.g., Commodity and Community Associations, Community Forestry Assoc., farmers Assoc WWF, IUCN, Flora and Fauna Intl., Women Association (Vietnam)	Local and international NGOs (e.g., Commodity and Community Associations, Community Forestry Assoc., farmers assoc., WWF, IUCN, Flora	Participate in NAMAs (in terms of technical outreach) Design and implement training (envi-friendly) programs for producers

Next-user Group	Specific Next-Users		Quantification	Necessary Practice Change
	Plantation/Reforestation	Rural Development		
		and Fauna Intl., Women Association (Vietnam)		
	University IPB, UGM, (Indonesia) Forestry University, Agro- Forestry University, (Vietnam) State Universities (Phil)	University IPB, UGM, (Indonesia) Agriculture University, Agro- Forestry University, (Vietnam) State Universities (Phil)	University (not in Vietnam, IPB, UGM, (Indonesia) Cambodian Agri R&D Institute NAFRI (Lao) State Universities (Phil)	Design and implement research and extension system for local government, to improve feasibility of mitigation measures (also visibility/transparency)
<i>Mitigation Research</i>	Agency for Agriculture and Forestry Research (under MOA and MOF) (Indonesia)	Agency for Agriculture and Forestry Research (under MOA and MOF) (Indonesia) ASEAN	Agency for Agriculture and Forestry Research (under MOA and MOF) (Indonesia) ASEAN	Design and implement research and extension system for local government, to improve feasibility of mitigation measures (also visibility/transparency) Exchange GHG reduction standards and technologies
<i>Regional</i>	ASEAN	ASEAN	ASEAN	

Next-user Group	Specific next users in the group
Regional level ASEAN: AFCC Mekong River Commission	National governments National governments
National level	

Table 5. Flagship 4

Next-user Group	Specific next users in the group
<p>Cambodia National Committee on CC Ministry of Agriculture, Forestry and Fisheries Ministry of Environment Ministry of Water Resource Management Ministry of Land Management and Urbanization Green Growth Committee National Committee for Disaster Management CARDI (research) Climate Change Alliance</p>	<p>National agencies Depends on the particular policy</p>
<p>Lao PDR National Committee on CC MoA MoPublic Health MoWater Resource Management MoNatural Resources NAFRI (research)</p>	<p>National agencies Depends on the particular policy</p>
<p>Philippines Climate Change Commission Large number of departments</p>	<p>National agencies Farmers,</p>
<p>Vietnam National Committee on CC Ministry of Agriculture and Rural Development Large number of departments Office of Climate Change (MoARD), Department of Science, Technology and Environment Vietnamese Academy of Agricultural Sciences (research)</p>	<p>National agencies Depends on the particular policy</p>

Table 5. Flagship 4

Next-user Group	Specific next users in the group
Institute of Policy and Strategy for Agriculture and Rural Development	
Indonesia	
Myanmar	

The participants then reviewed the practice changes that are necessary for achieving the CCAFS SEA vision in terms of their commonalities and patterns. They combined the changes into a single major outcome for their flagship that addresses the most important groups of next-users and necessary changes.

These preliminary outcomes were periodically reviewed and improved throughout the workshop as participants gained more insight into their flagship impact pathways. The final CCAFS SEA flagship outcomes are:

Flagship 1.1 - Local public and private sector stakeholders (service providers, farmer leaders, etc) are engaged in identifying and meeting priorities of farmers, including women and other marginalized groups, and accessing CSA knowledge, technologies, and tools so that they have increased awareness and enhanced capacity to advise on evidence and knowledge based climate smart technologies.

Flagship 1.2 and 1.3 - The public sector at multi-levels providing the enabling environment (policies, frameworks), appropriate investments, and knowledge to facilitate coordination, partnerships leading to adaptation and dissemination of strategies that promote climate smart technologies and practices.

Flagship 2 - National public sector institutions have sufficient understanding of the climate information needs of stakeholders in the food system; collaborate on the design of climate services and products which meet those needs; and interpret and communicate the climate information effectively.

Flagship 3 - MOA/ENR/F/ and LGs innovate, plan, invest, regulate/reform/enforce laws and develop incentives for understanding, accessing and implementing low-emission/CSA technologies appropriate for local contexts through multi-stakeholder consultation.

Flagship 4 - Policy makers have enhanced the design, investment decisions, implementation and monitoring & evaluation of agro-sectoral climate change policies, through more transparency, effective inter-agency coordination and consultation with stakeholders from local to national level.

Outcome barriers and behavior changes

After developing their flagship outcome statements for SEA, the participants documented the factors in terms of incentives, agency, norms and external influences that prevent next-users from taking decisions that would lead to the target outcomes. They also considered what changes in terms of next-user knowledge, attitude and skills would be necessary to overcome these barriers and achieve the CCAFS outcomes.

Tables 6-9. Next-users knowledge, attitude and skills outcomes necessary for overcoming barriers to achieving the CCAFS SEA flagship outcomes.

		Table 6. Flagship 1		
		(Outcomes)		
Next user groups	Barriers	Knowledge	Attitude	Skills
Advisory groups	<ul style="list-style-type: none"> • Lack of knowledge on participatory approaches • Limited access to information • Lack of mechanism to bridge the R&D and extension • Lack of financial and logistics support • Inadequate communication skills (Highly technical language needs to be “simplified”) 	Advisory group making use of available knowledge on CSA	Advisory group encouraging participatory planning and multi-stakeholder collaboration	advisory groups have the technical competency
Sub-national governments	<ul style="list-style-type: none"> • Short planning horizon (linked to political cycles) • Lack of mechanism to bridge the R&D and extension • Limited budget • Fast turn around of trained staff (movement, promotion) • Low priority to rural development 	Sub-national govts are equipped with tools to access and disseminate technologies	Sub-national govts are thinking of innovative strategies despite limited resources	Sub-national govts are implementing innovative strategies using CSA tools
SMEs (that provide inputs and services)	<ul style="list-style-type: none"> • Lack of incentive to promote CSA principles • Lack of financial capital to invest in new business models and/or products • High risk associated with agriculture 	SMEs are engaged in developing innovative products and enterprises providing income opportunities and enhanced resilience for women and	SMEs are open to new and innovative ideas, approaches, business models and market demands	SMEs are able to create new markets to meet socially differentiated demands

Table 6. Flagship 1			
(Outcomes)			
Next user groups	Barriers	Knowledge	Attitude
	<ul style="list-style-type: none"> • Underinvestment on the potential SMEs that women can manage 	marginalized groups	
Academic institutions	<ul style="list-style-type: none"> • Lack of capacity to teach CSA principles and practices • Lack of resources • Reluctance to take over newly disciplines • Limited interdisciplinary/transdisciplinary integration 	Academic institutions have the capacity to develop and teach CSA	Academic institutions practice interdisciplinary approaches to CSA
Farmer associations	<ul style="list-style-type: none"> • Lack of awareness of CSA • Limited access to CSA • Low involvement/representation of women in leadership positions • Lack of demonstrated success • Myopic ways of thinking (thinking out of the box) 	FAs are aware and have broader perspective on CSA	FAs are appreciative on the use of CSA principles and tools including the active involvement of women
Non-government organizations	<ul style="list-style-type: none"> • Lack of awareness of CSA • Limited access to CSA • Lack of mechanism for funding and collaboration • Mismatched indicators of performance (M&E) • Limited engagement with government institutions 	Increased knowledge on CSA	NGOs are recognized to promote CSA technologies NGOs are "climate proofing" their projects
			Academic institutions are using systems analysis tools
			FAs are equipped in using CSA developed tools and technologies
			NGOs are using CSA tools and technologies in their projects

		(Outcomes)		
Next user groups	Barriers	Knowledge	Attitude	Skills
	<ul style="list-style-type: none"> Limited foundation of work defined by preset opinion and agenda 			
Input, credit and service providers	<ul style="list-style-type: none"> Lack of incentives Limited profits High risk associated with farming Lack of government support 	ICSPs are able to assess the risks	ICSPs are able to handle risks	ICSPs are able to manage climate risks
Development agencies	<ul style="list-style-type: none"> Lack of information on CSA practices Agenda is not coordinated at local level 	DAs are informed on the portfolio of different CSA options	DAs are considering options and testing it for their site-specific settings	DAs are able to identify suitable options in the local context of the projects

Group	Specific next users in the group	Barriers
Government	Central govt. Extension services.	No system to evaluate current climate services to determine if they meet needs of next users.
	Agr/Livestock/Forestry/Aqua	
	Local. Extension services.	Limited human resources at NMHS to 1) understand the problems. 2) understand needs of users. 3) to produce climate service needed by users
	Agr/Livestock/Forestry/Aqua	
	Local government	
	National Meteorological Services	Lack of commitment to disseminates climate services/info/data to users.
	LAO, KHM, VNM, Ministry of Agriculture	
National Research Institutes		

Table 7. Flagship 2	
Group	Specific next users in the group
	<p>Barriers</p> <p>Lack of enabling environment (policies/laws/decrees) e.g. restrictions on access to climate data (high fee for data)</p> <p>Decentralized agricultural services results in skilled technical staff being assigned administrative tasks.</p> <p>Personnel policies / financial resource allocation do not encourage recruitment/retention of skilled technical staff (NMHS and Agr Ext Workers)</p> <p>Lack of structured training (curriculum, materials, trainers) for building capacity (KAS) for climate services and their application (NMHS and agr ext workers)</p> <p>Climate Impact outlook - is lacking or limited in scope/scale</p> <p>Resources to act in response to need are limited</p> <p>Lack of enabling environment (policy/laws) to encourage local govt/actors to take pro-active measures for climate risk mgmt. [releasing resources only after event/shock]</p> <p>Lack of enabling environment (policy/laws) to encourage communication & coordination to take pro-active measures. Lack of mechanism(s) to share good practices (inter-sector).</p> <p>Role of private sector is limited by lack of enabling laws, subsidies, etc</p> <p>Strong country interests. Takes time to identify common interest.</p> <p>Lack of mechanism(s) for encouraging/facilitating exchange of knowledge, experiences, good practices among extension workers</p>
Regional Institutions	ASEAN Tech Working Groups

Group	Specific next users in the group	Barriers
		<p>Lack of effective utilization of current technologies. [e.g. ASEAN Climate Outlook Forum – started only recently] Lack of mandate / technical capacity to produce seasonal forecasts at increased spatial and temporal resolution.</p> <p>No formal structure to collaborate in providing climate services to less advanced NMHS in AMS.</p> <p>Limited recognition of the role of civil society to increase effectiveness, sustainability of use of climate services/info/data.</p> <p>Play limited/no role in evaluating effectiveness of climate services</p> <p>Limited understanding on climate science constraining capacity to deliver technically sound climate outputs to their users Limited interaction/collaboration with universities, research inst, NMHS.</p> <p>Lack of mechanism for evaluation of user-producer gap. Lack of mechanism to bridge user –producer gap.</p> <p>Lack of mechanism to maintain capacity to translate / deliver farmer needs to data producers.</p> <p>Inadequate private sector involvement in dissemination process. Products not well designed to meet user needs.</p> <p>Sector is not sufficiently forward looking. Lack of vision.</p> <p>Climate service/info not incorporated into product design [e.g. climate criteria not part of loan decisions] Inadequate engagement of private sector [e.g. premium costs high/prohibitive] Need to enlarge risk pool</p>
Civil Society	<p>Local NGOs, non-profit, profit International NGOs Farmer's associations (farmer coop/grp)</p>	
Private sector	<p>Input suppliers – fertilizer, seeds, IT, telecoms Retailers, markets Insurance Banks, MFIs Market Federation, chamber commerce</p>	

Table 7. Flagship 2	
Group	Specific next users in the group
	Barriers Activities not achieving Economies of Scale
Development Partners	UN agencies FAO, WFP Development Banks (ADB, WB, IFAD) Climate services not effectively used in analysis of vulnerable areas and/or populations. Climate data not effectively used when managing disaster risk reduction / relief efforts Climate info not considered in multi-lateral development bank loan decisions. [Inadequate time allocated for info/ data collection] Risk profile too narrow/small. [underspending on climate] Govts cannot easily access funds costs (time/effort) too high.
academic	Universities (met, agr, forest, aqua, livestock) Institutes (Policy research etc) Student association Inadequate interaction with extension services resulting in appropriate priorities in applied research – e.g. climate products, agr, agro-met. Lack of national Research center(s) on CC Short term: Lack of curriculum to build capacity of ext workers / local govt agencies to use climate services Medium term: Lack of system for student exchange across AMS certification level courses (e.g SEAMEO for medical science) Long term: Lack of exchange students across AMS (MA/PhD level).
media	TV, radio, newspapers, magazine, online Reports have inadequate spatial / temporal resolution s. Not sufficiently geographically specific. weather/climate info not covered by TV breaking news: TV programs not adequate use of climate services, No role in sharing of good practices. Insufficient collaboration between AMS media networks
KNOWLEDGE Outcomes	

Table 7. Flagship 2

Group	Specific next users in the group	Barriers
	<ul style="list-style-type: none"> Public and private sectors have an adequate understanding of the potential use of climate information for agriculture & food security. Media has adequate understanding of climate information to accurately convey messages about climate risk. Ext workers have sufficient understanding of climate information (both "forecast skill" and reliability of indigenous knowledge) to advise farmers about management / livelihood options. 	
	<p>ATTITUDE Outcomes</p> <ul style="list-style-type: none"> Public and private sectors have an increased appreciation for the importance of climate risk management for agriculture & food security. Extension workers have sufficient confidence in climate forecasts provided by NMHS to advise farmers about available options and consequences. Public and private sector have sufficient understanding of and confidence in safety nets, including insurance, to unlock opportunities for enhanced climate risk management. 	
	<p>SKILLS Outcomes</p> <ul style="list-style-type: none"> NMHS have the skills to evaluate and use state of the art tools and techniques, including global and regional model outputs, to produce reliable climate information. Public and private sectors have adequate skill to evaluate/interpret probabilistic forecast information. Public sector (AGR & NMHS) has communication skills to disseminate climate information and the potential impact(s). 	

Table 8. Flagship 3

Next-user group	Barriers	Knowledge	Attitude	Skills
<p>Ministries National Level Committees/Groups responsible for mitigation in terms of plantation/reforestation, rural development and quantification</p>	<ul style="list-style-type: none"> Confusion (overlapping roles, lack of clear roles,) Competition between ministries (lack of expertise in one agency) Uneven quality and insufficient information (contradicting) 	<p>MOA/ENR/F access and understand high quality information on technical options including</p>	<p>MOA/ENR/F enhance policy- decision making based on information on <i>feasible target</i>, and perception of mitigation as compatible with development objectives.</p>	<p>Management and technical officers in ministries effectively use evidence-based information to improve policy/priority setting for CSA.</p>

Table 8. Flagship 3			
Next-user group	Barriers	Outcome(s) – WHO is doing WHAT... DIFFERENTLY?	
		Knowledge	Attitude Skills
	<ul style="list-style-type: none"> - information) - Conflict of interest (special interest to special group - Lack/insufficient resources (financial and human) for mitigation (not priority of the government) - Gap in communication and knowledge among policy makers, farmers and researchers - Costly mitigation measures - Corruption/governance issue (lack of transparency/accountability) - “Resistance to change” (vested interests) 	<p>compatibility with development objectives.</p>	
<i>Subnational government structures responsible for mitigation</i>	<ul style="list-style-type: none"> - Lack of accountability on mandated function - Not a priority (short-term development priority) - lack of capacity, - Insufficient resources, - Lack of access to information - Hierarchy of decision-making (national government making the final decision) 	<p>Local government units access and understand science-based information on CSA.</p>	<p>Local chief executives, planners and extension workers influence producers in making informed-decision in terms of CSA.</p> <p>Local chief executives, planners and extension workers access and effectively use science-based information to improve their service delivery to producers.</p>

Table 8. Flagship 3			
Next-user group	Barriers	Outcome(s) – WHO is doing WHAT... DIFFERENTLY?	
		Knowledge	Attitude Skills
	<ul style="list-style-type: none"> - High transaction costs for reaching large number of LGUs - Costly mitigation measures - Corruption - “Resistance to change” (vested interests) 		
<i>Development Partners/Investors for mitigation</i>	<ul style="list-style-type: none"> - Own agenda/different interest or objectives - Costly mitigation measures - Competition between development partners - High uncertainty in emission reduction figure (lack of evidence on impact of mitigation measures, long payback period hence preference for quick/short-term return) - No economic assessment (cost and benefit) of interventions - High-risk (accountability, Low carbon price/Uncertainty in carbon market - “Resistance to change” (vested interests) 	<p>Development partners and investors have adequate information on priorities of government and producers, and on the evidence of mitigation options that will contribute to government’s development objectives.</p>	<p>Development partners and investors effectively use information on national priorities to identify critical areas of assistance for CSA.</p>

Table 8. Flagship 3			
Next-user group	Barriers	Outcome(s) – WHO is doing WHAT... DIFFERENTLY?	
		Knowledge	Attitude Skills
<i>Private Sector</i>	<ul style="list-style-type: none"> - High uncertainty in emission reduction figure (lack of evidence on impact of mitigation measures, long payback period hence preference for quick/short-term return) - No economic assessment (cost and benefit) of interventions - High-risk (accountability, Low carbon price/Uncertainty in carbon market - Perception of trade-offs between emission and productivity - Mitigation perceived to add more cost <p>High certification cost</p>	<p>Companies know the feasible options for low emission/CSA and the available incentives.</p> <p>Companies take advantage of enabling environment/policies to expanding their CSR and participate in decision-making.</p>	<p>Companies uses evidence-based information and government policies in choosing the most feasible mitigation intervention</p>
<i>Civil Society</i>	<ul style="list-style-type: none"> - Donor-driven priority - Weak influence of policy implementation - Lack capacity for quantification (??) - No enough sharing of data/information - Confrontational approach in communicating with government 	<p>NGOs access updated data and science-based information.</p> <p>NGOs taking advantage of enabling environment and science-based information to participate in planning for and implementing CSA options</p>	<p>NGOs strategically assist the government and producers in implementing most feasible low-emission/CSA options.</p>

Table 8. Flagship 3

Next-user group	Barriers	Outcome(s) – WHO is doing WHAT... DIFFERENTLY?		
		Knowledge	Attitude	Skills
	<ul style="list-style-type: none"> - Varied vision for long-term for low-emission development - Low capacity to upscale (very fragmented approach) - "Resistance to change" (vested interests) 			
<i>Mitigation Research</i>	<ul style="list-style-type: none"> - Lack of human resources, money and facilities - High cost and difficulty of field research - Limited access to information and open resources - "Resistance to change" (vested interests) - Overlapping priority agenda <p>Competition among researchers</p>	<p>Researchers develop and share updated data and results of scientific studies important to planners and decision-makers</p>	<p>Researchers strongly collaborates with others research institutions and users for a more (cost) efficient and effective research undertakings.</p>	<p>Researchers conduct "market-based" researches and studies, relevant and responsive to emerging development issues and have credible results.</p>
<i>Regional organizations</i>	<ul style="list-style-type: none"> - Multiple agenda and vested interests of member countries <p>No power to influence (??)</p>	<p>ASEAN well informed of member countries' development needs and priorities.</p>	<p>ASEAN perceives mitigation as compatible with countries' development objectives.</p>	<p>ASEAN access and uses science-based information in promoting regional framework/strategies for CSA.</p>

Initial Summary of Flagship 3 KAS:

- K – High quality, evidence-based information on feasible options and national priorities
- A – Plan, invest, regulate/reform/enforce laws and develop incentives in consideration of science-based information on mitigation options being compatible to development objectives.
- S – Able to access and effectively use information, and dialogue with other relevant ministries, stakeholders and partners.

Table 9. Flagship 4

Next user group	Barrier	Knowledge	Attitude	Skills	Other
National policy makers	<p>Poor policy implementation:</p> <ul style="list-style-type: none"> -Lack of and poor coordination among agencies in terms of follow up actions -Sometimes lack of commitment of agencies <p>-Sometimes, key decision-makers have limited knowledge about climate change policy options</p> <p>-Often, “too many projects to look after” (lack of time)</p>	National policy makers make better use of science-based knowledge.	National policy makers have adopted the willingness to share information, listen to each other, and seek common ground.	National policy makers are designing effective policy options. Office staff is using professional tools.	Incentives are in place to motivate the desired attitude change. More targeted recruitment and staff development (“CCAFA” trained)

Table 9. Flagship 4

Next user group	Barrier	Knowledge	Attitude	Skills	Other
	<p>-Competing priorities among agencies in terms of content (e.g., mitigation vs. adaptation) and in terms of getting a share of the budget</p> <p>-Sectoral policies versus sub-national priorities (e.g., municipalities) that have multi-sectoral needs</p> <p>-Lack of financial resources controlled by national governments; donors have the final say about allocations</p>		<p>National policy makers have adopted the willingness to share information, listen to each other, and seek common ground.</p>	<p>National policy makers are building partnerships.</p>	<p>staff) in place. Incentives are in place to bring about the change of attitude and practice.</p> <p>Effective mechanisms to mobilize resources from key stakeholders (Public-Private Partnerships) at all levels in place.</p>
	<p>Lack of practical policy regulations, incentive measures,</p>	<p>National policy makers make better use of science-based</p>		<p>National policy makers are designing effective policy</p>	<p>Good implementation practices are</p>

Table 9. Flagship 4

Next user group	Barrier	Knowledge	Attitude	Skills	Other
	and designated budget lines	knowledge taking into consideration social and gender differentiation.		options taking into consideration social and gender differentiation.	available to learn from (e.g., payments for agricultural conservation services; community-based climate smart innovation fund)
	Poor knowledge about base-line situations (community level realities, policy content and budget levels) / deficient consultative processes at sub-national levels	National policy makers are able to incorporate up-to-date knowhow about climate change policy design (including processes) and resource allocation, paying particular attention to social differentiation and marginalization.		National policy makers are using science-based information about local realities for policy design, implementation and monitoring, paying particular attention to social differentiation and marginalization. .	Methods and tools for tailor-made climate smart policy design, implementation and monitoring are available (in local languages).
	Lack of transparency		Policy makers change attitude towards communication, openness and sharing of information	National policy makers use funds efficiently.	Increased accountability, better administrative systems
	Very poor monitoring systems in place, hindering bottom-up inputs gathering,	National policy agencies have the capacity to use M&E for implementation of			Adequate resource allocation for M&E (equipment, operational funds)

Table 9. Flagship 4

Next user group	Barrier	Knowledge	Attitude	Skills	Other
	<p>and assessment of implementation</p> <p>Unwillingness of the private sector to dedicate resources to high risk areas/ sectors</p>	<p>policies.</p> <p>National policy makers have a clear understanding of the points of view and interests of the private sector.</p>	<p>National policy makers and private sector actors have built up a relationship of trust.</p>	<p>National policy makers and private sector actors have built up a relationship of trust.</p>	<p>etc.) in place.</p> <p>Innovative forms of sharing resources, benefits, and for minimizing risks between the public and private sector actors are available.</p>

Major milestones and actions in the CCAFS SEA flagship pathways

The participants next considered the major groups of research outputs, products and deliverables that would need to be produced to achieve their outcomes. They considered things like new knowledge from research, new capacity for stakeholders, new policies, decision support systems, etc. However, they did not consider these deliverables in isolation, but how they would need to come together in packages that would enable change. This allowed them to then consider the major groups of research actions that would be necessary to create those milestones. In the process of documenting these major milestones and research actions, the groups documented the assumptions they were making and any strategies that would be necessary to address negative assumptions and assure that the actions would lead to the milestones, and the milestones would in turn lead to the outcomes.

Tables 10-13. Milestones (output/product/deliverable packages) and research actions necessary for achieving the CCAFS SEA regional flagship outcomes.

Table 10. Flagship 1			
Output/product/deliverable/milestones	Target groups/Focus (next-users)	Partners	Research actions
1.1 CSA tool boxes for different stakeholders (compilation of technologies and tools including models and protocols for scaling up) including decision support systems for policy, planning and forecasting	<ul style="list-style-type: none"> • Sub-national government • SMEs and input, credit, service providers • Research and academic institutions • NGOs • Farmer associations • Media • Advisory groups • Development agencies 	Research and academic institutions CG Centers Donor and development partners	<ul style="list-style-type: none"> • Site-based research in each of the countries in a landscape approach using participatory adaptive research <ul style="list-style-type: none"> - Scalable - Actionable • Participatory development of DSS focused on PPF - Using landscape approach - Trans-boundary
1.2 Knowledge management and exchange such as forum, mass media, internet, mobile phone	<p>Topics:</p> <ul style="list-style-type: none"> • Gender • Small farm holder farm operations (land and water) • Use of agromet data and climate risk management 	Research and academic institutions CG Centers NARS Private sector and NGOs	<ul style="list-style-type: none"> • Synthesis of cross country case based experiences • Regional learning alliance • Delivery platform development for CSA • Multi-factor delineation of

Table 10. Flagship 1			
Output/product/deliverable/milestones	Target groups/Focus (next-users)	Partners	Research actions
	<ul style="list-style-type: none"> • Food production • Innovative business enterprises • Consumers (why consumers would be interested to invest on CSA) 		<p>climate related effects and impacts (considering migration, social and gender, financial crisis in the region)</p>
1.3 Capacity building Program (training)	<ul style="list-style-type: none"> • Sub-national government • SMEs and input, credit, service providers • Research and academic institutions • NGOs • Farmer associations • Advisory groups • Media 	<p>Research and academic institutions CG Centers NARS Private sector and NGOs</p>	<ul style="list-style-type: none"> • Developing innovative capacity building strategies specific to countries, sector and scale (eg: Digital Green approach, pilot demos, ICT) linked with existing NARS and NGOs <p>Training of trainers and translation of materials in local language</p>
<p>Assumptions:</p> <ol style="list-style-type: none"> 1. Multi-stakeholder involvement 2. Participatory approach 			

Table 1.1. Flagship 2

Detailed outputs	Partners
System is developed to enhance the quality of the climate forecasts (seasonal and medium-range) and to provide advisories and impact outlooks based on those forecasts.	NMHS, ARI, Agr (crops, forestry, fisheries, livestock), telecoms, ext services, private sector, farmer assoc, water resources mgr
1. System is established for user needs assessment and feedback	Agr (crops, forestry, fisheries, livestock), telecoms, ext services, private sector, farmer assoc, water resources mgr
2. Enhanced quality seasonal and medium-range climate forecasts are developed	NMHS, ARI,
3. Advisories and impact outlooks based on those forecasts are developed and disseminated.	NMHS, ARI, Agr (crops, forestry, fisheries, livestock), telecoms, ext services, private sector, farmer assoc, water resources mgr
Climate products developed – historical station data has been cleaned, and blended with satellite data. High spatial resolution grid format.	NMHS (data), Adv Research Inst (techniques)
Climate products developed – e.g. location specific seasonal climate forecasts are developed. climate parameters derived from historical data.	ARI (multiple forecast sources), NMHS (analysis, comparison)
Agro-climate products developed – e.g Crop suitability maps. Cropping calendar	
NMHS capacity to produce location-specific climate forecast products is strengthened.	NMHS (trainee) and ARI (trainer)
System for evaluating effectiveness/usefulness of climate products is developed	NMHS, Agr (crops, forestry, fisheries, livestock), water resources
Mechanisms developed for disseminating climate services to national, sub-national, community, and farm levels.	NMHS, telecoms, ext services, private sector, farmer assoc
Models are developed and validated to forecast agr prod, prices, food security status to produce a decision support systems for agr / FS planning	NMHS, Agr (crops, forestry, fisheries, livestock), water resources mgr
Output/product/deliverable Milestones	Partners
1. Capacity established within a system to understand and act on agro-meteorological information needs of end-users and their support network.	Agr (crops, forestry, fisheries, livestock), telecoms, ext services, private sector, farmer assoc, water resources mgr
2. Systems enhanced to develop high-quality historical climate data, seasonal and medium-	NMHS, Adv Research Institute, Agr (crops, forestry, fisheries, livestock)
	Research actions Develop a user needs assessment and feedback mechanism Assess the capacity building requirements of NHMS in AMS to

Output/product/deliverable Milestones	Partners	Research actions
range forecast products, advisories, and impact outlooks.	livestock),	develop high-quality climate data and products.
3. Communications channels established to deliver climate products to end-users and their support networks, enabling them to use these products to enhance climate resilience.	NMHS, Adv Research Institute, Agr (crops, forestry, fisheries, livestock), telecoms, ext services, private sector, farmer assoc, water resources mgr	Assess effectiveness of communications channels for delivery of climate products to end-users and capacity needs to use them.
<p>Flagship 2 Assumptions: Funding, sufficient personnel and supporting infrastructure in NMHS, supporting policies/regulations in place, recognized need for climate products, willingness and ability of end-users to change behavior, climate variability impacts end-users, telecommunications infrastructure exists to support dissemination of products.</p> <p>Flagship 2 Strategies: Strengthen partnerships among NMHS in AMS to develop convincing programs to attract international support. Sensitize AMS on need to meet NMHS minimum requirements (personnel & supporting infrastructure). Identify key policies and regulations needed by end-users and their support networks to use climate products effectively.</p>		

Table 12. Flagship 3

OUTPUT/PRODUCT/DELIVERABLE MILESTONES	PARTNERS	RESEARCH ACTIONS
1) Quantification methods + MRV	Research institute Vietnam – Lao – Min. of Science and Tech; Indonesia – government; (national and local) NARS IPCC (national and international; government/ relevant ministries, university/academe)	<ul style="list-style-type: none"> - Evaluate alternatives/available quantification methods (e.g., land use change/plantation, paddy rice low-emission system, landscape mitigation) -<i>project</i> - Develop quantification procedure/protocols/ guidelines – priority action - Identify prioritization method/priority for measurement - <i>project</i> - Capacity building/ strengthening – <i>project</i>

Table 12. Flagship 3

OUTPUT/PRODUCT/DELIVERABLE MILESTONES	PARTNERS	RESEARCH ACTIONS
2) Decision support tools and sets of options (innovations systems)	Research institutes (national and international organizations), relevant ministries, universities, private sector	<ul style="list-style-type: none"> - Review of existing tools (e.g., site selection, priority area for investment, requirement for implementation of low-emission/CSA method) - Populate decision support tools with actual innovation - Develop tools/model to estimate emission reduction (e.g., maps, programmable tool) - Identify prioritization method/priority for investment - User friendly interface - Capacity building/strengthening (inc., dissemination, awareness raising, scaling-up)
3) Feasibility of low-emission agriculture tested for compatibility with development objectives	Research institutes (subnational, national and international organizations); relevant ministries, private sector, development organizations	<ul style="list-style-type: none"> - Review existing low-emission technology/option for agriculture - Piloting/Testing low-emission/CSA technologies/options, to inform decision-makers on feasibility of options for upscaling - Develop methodology/ procedure for assessing/evaluating feasibility

Table 13. Flagship 4

Output/product/deliverable milestones	Research Actions
Multilingual and user friendly knowledge-generation and sharing platforms, at national and regional level	1, 2, 3, 8
Transparent and efficient stakeholder quality consultation mechanisms from local to regional level	4, 5

Table 13. Flagship 4

Output/product/deliverable milestones		Research Actions
Effective CSA policy coordination, implementation, and monitoring & evaluation of options and recommendations		6, 7
Actions		
Partners		
1. Policy makers and other stakeholders have open access to database of available CSA programs/ options	National ministries (see next users from day 2), ADB, World Bank, Other donors, academic national institutions, key NGOs	
2. Knowledge sharing platform of national adaptation and mitigations strategies	National ministries (see next users from day 2), UNFCCC and other relevant UN agencies, ADB, World Bank, Other donors, academic national institutions, key NGOs, CG centers, media	
3. Critical review and gap analysis of implemented policies and programs, and lessons learnt	CG centers, NARS, Academic institutions: SEARCA, AIT, NUS	
4. Create or Improve Platforms/ Policy Forums for stakeholders consultation	National ministries (see next users from day 2), UNFCCC and other relevant UN agencies, ADB, World Bank, Other donors, academic national institutions, key NGOs, CG centers, media, relevant private sector entities (chambers of commerce etc)	
5. Identifying and developing appropriate communications strategies that allow informed consultation on CSA issues among interested stakeholders	Media, national specialized agencies with communications expertise, universities	
6. Identifying sound M&E frameworks including measurable indicators, and building capacity among sub-national, national and regional implementers	CG centers, policy research institutes, national ministries, Development Partners (World Bank, ADB, IFAD etc), UNFCCC and GEF	
7. Making available, promoting and building capacity towards identifying and implementing CSA investment options to national and sub-national constituencies. Incentives for CSA investments are in place and are effectively communicated to stakeholders.	CG centers, Universities, Local Training providers, NARS, Development Partners (IFAD etc), NGOs, Financial Institutions (banks, insurance companies etc), National Planning and Policy Oversight agencies (NEDA etc)	
8. Enhancing a regional CSA dialogue framework, with strong and clear interlinkages with existing national bodies	CG centers, Universities, Local Training providers, NARS, Development Partners (World Bank, ADB, IFAD, GIZ etc), NGOs, National Planning and Policy Oversight agencies (NEDA etc), ASEAN	

Mapping current climate change research and identifying synergies/gaps

Finally, the participants considered the climate change related research currently on-going in SEA, being implemented by CCAFS as well as all other stakeholders, and mapped this research to the CCAFS SEA flagship impact pathways through the research actions. Mapping current research allowed the group to identify where CCAFS's research needs are currently being met, where there may be redundancies in effort, where there may be synergies between different projects, and where there were gaps that need to be filled. The groups kept notes on these issues, and made recommendations to CCAFS in terms of urgent programming needs and partnerships. As before, they also noted their assumptions and strategies.

Tables 14-17. On-going projects in support of the CCAFS SEA flagship impact pathways, and critical research gaps.

Table 14. Flagship 1		
Output/product/deliverable/milestones	Existing Projects	Additional Research
<p>1.1 CSA tool boxes for different stakeholders (compilation of technologies and tools including models and protocols for scaling up) including decision support systems for policy, planning and forecasting</p>	<p>Farm Level</p> <ol style="list-style-type: none"> 1. Developing updated cropping calendar (UPLB, Dr. Lansigan) 2. Climate advisory and cropping calendar (NAFRI-Lao, 3. Biogas optimization and management of livestock waste (Cambodia) 4. Climate smart models 5. Mobile phone apps (requires adaptation for cropping systems) + climate change (IRRI, R Buresh and R Wassman) 6. Cool farm tool and EXACT (Carbon balance in agriculture) FAO-Vietnam 	<p>Optimal application of inputs (water, fertilizer), feeds that will minimize GHG and improve input-use efficiency</p> <p>Optimal crop-livestock combination considering seasonal climate and market outlook</p> <p>Value chain analysis</p> <p>Demand analysis for new CSA products</p> <p>Integrated methods that address both adaptation to and mitigation of climate change</p>

Table 14. Flagship 1

Output/product/deliverable/milestones	Existing Projects	Additional Research
<p>1.1 CSA tool boxes for different stakeholders (compilation of technologies and tools including models and protocols for scaling up) including decision support systems for policy, planning and forecasting</p>	<p>Farm Level</p> <p>7. Downscaling of GCMs (FAO -Vietnam and Philippines)</p> <p>8. Plantwise for plant protection (CABI, MoaI-Myanmar)</p> <p>9. Talking Tool Kit for farmer groups (ICRAF)</p> <p>10. Climate advisories (CARE-Vietnam)</p> <p>11. Crop forecasting linked with seasonal climate forecast/climate outlook (UPLB)</p> <p>12. Water saving irrigation (Vietnam –IWMI)</p> <p>13. Climate risk assessment tool kit (RMIT University-Vietnam)</p>	<p>Decision support system for optimal land use planning considering climate risk</p> <p>Decision support system for integrated farming systems (farm level and landscape)</p> <p>Guidelines for simple decision making for resource allocation (DAs, local government)</p>
<p>1.1 CSA tool boxes for different stakeholders (compilation of technologies and tools including models and protocols for scaling up) including decision support systems for policy, planning and forecasting</p>	<p>Farm Level</p> <p>14. Participatory Carbon monitoring (ICRAF)</p> <p>15. Feed formulation to reduce GHG and fodder supply (Cambodia)</p> <p>16. Palay Check (PhilRice, NAFRI, Indonesia)</p> <p>17. Guidebook on PVS (IRRI)</p>	

Table 14. Flagship 1

Output/product/deliverable/milestones	Existing Projects	Additional Research
<p>Overlaps and Synergies</p> <ol style="list-style-type: none"> 1. Database to know who is doing what, where and when (country, region) 2. Working group to coordinate the overlaps and gaps 3. Consolidation of existing tools under CCAFS tool kit 		
<p>1.2 Knowledge management and exchange such as forum, mass media, internet, mobile phone</p>	<ol style="list-style-type: none"> 1. Knowledge management system on CC adaptation for SEA (SEARCA) 2. Rice Knowledge Bank expanded to address CC (IRRI) and linked with NARS for country specific adaptation) 3. Rice information gateway (IRRI) 4. Value Asia (Econ Env Prog SEA-Los Banos) 5. Farmer Channel (MoAI, Myanmar) 	<ul style="list-style-type: none"> • Updating of Gender-based disaggregated adaptation strategies in agriculture • Innovative business enterprises in food • Why consumers would be interested to invest on CSA • Update the crop-land use suitability that includes climate change
<p>1.2 Knowledge management and exchange such as forum, mass media, internet, mobile phone</p>	<ol style="list-style-type: none"> 6. Evidence based database for CSA practices in Vietnam (FAO-Vietnam) 7. Coffee PPP linked with Nestle's 8. Working Groups on Climate Change (Cambodia) 9. Farmer Connect (Vietnam) 	<ul style="list-style-type: none"> • Scanning and screening of past research on CC (inventory of relevant research) • Developing modules to raise awareness of media practitioners

Table 14. Flagship 1		
Output/product/deliverable/milestones	Existing Projects	Additional Research
<p>Overlaps and Synergies</p> <ol style="list-style-type: none"> 1. Development of meta database 2. Protocols for sharing data and information taking into account efforts conducted by other programs and donors <p>1.3 Capacity building Program (training, institutions and facilities)</p>	<ol style="list-style-type: none"> 1. Training course on responding to climate change in agriculture (online) -SEARCA 2. International crop-environment interaction in a changing climate – UPLB-Wagenigen University 3. Training on economic analysis tools (valuation, cost-benefit analysis) cum research mentoring (EEPSEA) 4. SUMERNET Capacity building through research in SEA (SIDA Funding) 	
<p>Overlaps and Synergies:</p> <ol style="list-style-type: none"> 1. Sharing of available modules and adapting them to local conditions 2. Exchange of resource persons/trainers 3. Streamlining of training programs taking <p>Assumptions and Strategies</p> <ul style="list-style-type: none"> • Multi-stakeholder involvement • Participatory approach • Country-specific • Landscape 		

Table 14. Flagship 1		
Output/product/deliverable/milestones	Existing Projects	Additional Research
<ul style="list-style-type: none"> • Trans-boundary (when applicable) 		

Table 15. Flagship 2 GAPS and SYNERGIES
<p>USER NEEDS ASSESSMENT Gap - user needs assessment. Plan - Implement user needs assessment in each country. Plan - Develop and implement an active feedback mechanism for users - producers.</p> <p>DEVELOP DATA / PRODUCTS Gap - Capacity bldg. for climate info producers. [Exchange of personnel AMS, producing effective climate products] Plan - develop accurate, cleaned, gridded Historical data. Plan - High resolution climate forecasts Synergy - CCAFS funded RIMES studies of climate services/capacities in SE Asia Synergy - UNISDR studies of climate services/capacities in SE Asia Gap - Institutional mechanisms for forecast interpretation & translation Synergy - Climate Outlook Forum (PHL, IDN, VNM), Monsoon Forum (MMR, KHM, LAO)</p> <p>COMMUNICATING Gap - end-users and supporting networks need capacity building to understand climate data Plan - Capacity bldg. for end-users and supporting networks [sector working groups, ext workers, media, farmers, financial institutions, farmer associations] Plan - establish multiple communication mechanisms Synergy - climate field schools (PHL, IDN), NAFRI agro-advisories (LAO) Plan - Identify mechanisms capable of sustaining initiatives that have been started Plan - establish an enabling environment [supporting policies and regulations]</p>

Table 16. Flagship 3

<p>Output 1: Quantification methods + MRV</p> <p>Priority action: Develop quantification procedure/protocols/ guidelines</p> <p>Research Projects:</p> <ul style="list-style-type: none"> - Protocol for sampling, field measurement and analyzing <ul style="list-style-type: none"> • Development of country/area-specific emission factor for high priority mitigation action for representative agri-ecosystem (soil carbon monitoring system is a specific gap in Indonesia) - Protocol for calculation/modelling; or remote sensing to estimate biomass and carbon stock - Review/Design MRV system based on landscape system (assumption: MRV system includes agriculture) - Capacity assessment and strengthening/building of local institutes in doing quantification (include facility – hard and software, skills development) - Field-scale quantification of GHG emission (rubber, oil palm, <i>alternative use of degraded/low carbon stock landscape/peatland</i>) - <i>Land use change analysis (under NAMAS), inc. plantation change – trajectory analysis of all landuse change (from forest to plantation, etc.)</i> - <i>GHG emission measurement from rice field, peatland</i> - Cost analysis of quantification and establishment MRV - Regional scoping activity (to identify research gaps)
<p>Output 2: Decision support tools and sets of options (innovations systems)</p> <p>Priority Action: Develop tools/model to estimate emission reduction (e.g., maps, programmable tool)</p> <p>Research Projects</p> <ul style="list-style-type: none"> - Fine tune/calibrate available models: <i>IMPACT-LITE model, spatial optimization model, cool-farm model, IMPACT-Scenario model</i> <ul style="list-style-type: none"> • Improve the models for specific user - Integrate cost-benefit data in decision support tools - Identify CSA options associated with best management practice for low-emission - Regional scoping (to identify research gaps)
<p>Output 3: Feasibility of low-emission agriculture tested for compatibility with development objectives</p> <p>Priority Action: Piloting/Testing low-emission/CSA technologies/options, to inform decision-makers on feasibility of options for up-scaling</p> <p>Research Projects</p> <ul style="list-style-type: none"> - Testing NAMAs for agriculture (rice, livestock, aqua-fishery, agro plantation) - Institutional mechanism modelling (for incentive?) - Identifying readiness conditions of projects/options/technologies

Output 3: Feasibility of low-emission agriculture tested for compatibility with development objectives
Priority Action: Piloting/Testing low-emission/CSA technologies/options, to inform decision-makers on feasibility of options for up-scaling
<ul style="list-style-type: none"> - Analyzing and “modifying” existing feasibility indicators (IRR, NPV, etc) for low-emission projects/options/technologies (to include cost-benefit data in output 2) - Develop system for scaling-up options - Institutional system for sustainable commodities/(practices?), including capacity building (e.g., certification, regulation, resource mobilization) - Regional scoping (to identify research gaps)

Table 16. Flagship 4

<p>1. Policy makers and other stakeholders have open access to database of available CSA programs/ options</p> <p>2. Knowledge sharing platform of national adaptation and mitigations strategies</p> <p>8. Enhancing a regional CSA dialogue framework, with strong and clear interlinkages with existing national bodies</p>	
Regional website: SEAN CC (UNEP, EU) Regional Network	
National Websites (Climate Change Alliance for Cambodia, NAFRI website in Lao, OCCA (Office of CC) in Vietnam	
Sustainable management and local ownership of existing platforms	Capacity building in informing and using the platforms
Strengthening linkages with national entities	User friendly interface of available information, translation in local languages
Surveying the usability of the platform	
Maintenance of the website/ platform	
Creation of policy exchange opportunities and channels between regional and national bodies	
<p>3. Critical review and gap analysis of implemented policies and programs, and lessons learnt</p> <p>Desk review of NAPAS (Cambodia, Lao, Vietnam) related to agricultural policies (done by Bioversity)</p>	

<p>3. Critical review and gap analysis of implemented policies and programs, and lessons learnt</p> <p>Review of current CC and Agriculture framework in Vietnam (FAO)</p> <p>OECD review of agricultural policies in Indonesia (ongoing)</p> <p>Review of CSA policies in Philippines (IFPRI, NEDA), CC, Agri Productivity and Food Security scenarios</p> <p>Review of Policies on CC and Agri in Vietnam and Myanmar (IRRI, CCAFS)</p> <p>Open access to produced information</p> <p>Monitoring ongoing activities; making case studies available as they come up</p> <p>Validation process of official publications takes too long</p> <p>Interim sharing of research outputs from ongoing projects through various communications channels</p> <p>Compiling experience from other parts of the world, sharing good practices</p> <p>Research on CSA existing frameworks and providing policy recommendations on key issues</p> <p>Identifying the right next-users platforms for sharing research results. Using regionally effective dissemination strategies (translation in local languages)</p> <p>Impact of CSA policies on Food Security</p>
<p>4. Create or Improve Platforms/ Policy Forums for stakeholders consultation</p>
<p>5. Identifying and developing appropriate communications strategies that allow informed consultation on CSA issues among interested stakeholders</p> <p>2nd Climate Change Forum in Cambodia (every 2 years)</p> <p>Yearly CC conference in Philippines</p> <p>Global CC Forum (UNFCCC)</p> <p>Independent conference organized by CSOs</p> <p>Forum under CC committee in Vietnam</p> <p>Support Program to respond to CC (Vietnam): Policy Matrix is reviewed/developed annually</p> <p>Non-Inclusive representation of marginalized groups</p> <p>Private sector is not adequately represented at events, and not involved in the policy forming processes</p> <p>Fatigue from attending conventional meetings etc</p> <p>Slow bureaucratic process to incorporate policy recommendation into national legislation</p> <p>Weak policy coordination mechanism between agencies</p> <p>Follow-up action needs to be stream-lined</p> <p>Community-based approaches in policy dialogue and formation</p> <p>Research on innovative ways for efficient dialogue and policy formation</p> <p>Identifying strategies and improve existing policy implementation frameworks</p>

<p>6. Identifying sound M&E frameworks including measurable indicators, and building capacity among sub-national, national and regional implementers</p> <p>Philippines – action plan and indicators but needs to be enhanced Lao, Cambodia – not yet, Vietnam (to be completed in 2015) Lack of human resources Lack of resources for developing M&E frameworks Common regional framework could be developed (ASEAN? Donor support) Past recommendations from CC conferences to be taken into consideration and translated into action Comprehensive M&E framework measuring impact to be designed</p>
<p>7. Making available and promoting CSA investment options. Building capacity towards identifying and implementing these options, to national and sub-national constituencies. Incentives for CSA investments are in place and are effectively communicated to stakeholders.</p> <p>Implementing CSA options in vulnerable areas, and down-scaling (Climate smart farmers business schools etc) Yield gap analysis for optimizing contribution of key crops with a CSA focus Agricultural Productivity and Socio-economic scenarios taking into consideration CC scenarios for SEA countries and regions Cost-benefit analysis of investment portfolios Creating an enabling financial environment for scaling up CSA practices and policies Monetize the mitigation benefits of CSA options</p>

Conclusions and Recommendations

Overall the workshop was successful, with good participation and feedback from participants. The participants found great value in the outcomes thinking approach used to map the CCAFS research agenda in SEA, and endorsed the resulting impact pathways. There was good interest in partnering with CCAFS to implement the research called for in the pathway and monitor the results obtained in terms of progress being made towards the regional and global outcomes of CCAFS.

At the end of the workshop the next steps in finalizing and managing the CCAFS impact pathway for SEA were explained to the participants:

- Review and harmonization of the pathways with the CCAFS mandate by the CCAFS SEA regional office.
- Review of the SEA impact pathway with the four flagship leaders involved, and harmonization with the global flagship pathways that link the five CCAFS regions to the CCAFS IDOs.
- Establishing an M&E system for the SEA impact pathway, and harmonizing this with the global flagship pathways to ensure objective, timely and representative reporting of indicators of progress towards the SEA outcomes, global flagship outcomes and IDOs.
- Finalization of the CCAFS SEA impact pathway.
- Creation of an M&E plan for CCAFS SEA and its partners.

There will be formal and informal sharing and vetting of the SEA pathway with regional stakeholders as the pathway evolves. The target is to complete the pathway and the M&E plan by the end of 2014. CCAFS is required to report to donors annually on progress towards its outcomes. It will design and implement its M&E system relying on quantitative and qualitative reflection, in collaboration with partners in the region. The system will include field surveys and interviews, as well as reflection on the assumptions and strategies in the SEA theory of change with partners to assess if they remain valid and implementation of the impact pathway should continue unchanged, or if adjustments to the work should be made to reflect new learning. Thus the CCAFS theory of change will become a hypothesis that is reviewed annually and modified when called for. The objective will be to provide CCAFS stakeholders in SEA with a detailed understanding of progress being made in the region, while contributing information and data in terms of the CCAFS flagship outcomes and IDOs.

This workshop relied on a facilitation methodology developed for the centre, flagship and regional members of the CCAFS working group on impact pathways and M&E for results-based management. The success of this workshop provides positive endorsement of the methodology that the working group members will use to facilitate the completion of impact pathways in all CCAFS flagships and regions.

Participant Feedback

Code of feedback	Q1. What new idea, thought or change will you take away from the CCAFS R4D workshop?	Q2. Where did we need more time or less time?	Q3. What is your recommendation for improving the process instructions and/or management?	Q4. What is your recommendation for putting this impact pathway into action?
1	CSA seem to best fit national policy of and agriculture and rural development in Vietnam	Need more time for plenary sessions	No comment	More practice in evidence, information, results, ideas to policy maker (awareness raising)
2	Multidisciplinary group discussion is new for me learning from workshop	Time schedule of workshop is appropriate	Presentation and lesson learning from successful research model need for workshop	Need to work with each country for full for full implementation
3	The ways of establish/develop longterm research plan	Moretime: define next-user; Lesstime: summary of gaps	Should ask participant to bring workshop the country situation	carry piloting and upscaling for country's agriculture and mitigation strategy
4	There are seems to be analogue things going on in the regions that could be built on for upscale, outscale and exchange	We again seen to repeat the barriers again and they remain the same/similar	Too many overlaps between the outputs of exercises despite different flagships so surely there could be more efficient ways of doing this. We havent yet talked about research ideas/strategies at very general level. I think could be done at interest groups and we would get for in 3 days	show what works among CGIAR-center
5	I find that aquaculture and fisheries sector may also take part in the CCAFS activities	More time: on what have been done in mitigation activities in agriculture in	No comment	ASEAN should put more efforts in mitigation research (more human and financial resources)

		SEA		
6	Think back words from impact, next user vs end user	ok	ok	define how to mention
7	Distinction of K, A, S	More time on the "survey" of ongoing activities and project in each country in SEA. This can be facilitated by giving a sheet for each participant to fill up	Shorter workshop to 2 days including the presentation; use of notecard will enable participants to speak out	Apply in next workshop
8	It will be hard to continue work in this region	More time to meet and discuss with the country's representative	we could have had the meeting in sitevent (eg. Dinner the night before) to discuss what was expected from CGIAR participant	the refused partner must know what is expected from them and what sort of resource they can access. I don't think it was clear up to now
9	We were missing private sector	to the elaboration of activities and outputs	to go through a national process and then regional one	to integrate key stakeholder from its inception
10	To involve NMHS organizations more in my ... of work	more time in the prospect in the regions	More reading material before meeting so there can be more knowledge sharing	Management must follow up closely once plans have been implemented
11	Ecosystem series are not attractive to farmer	ok	more flexibility input/discussion	Aim for efficiency in all partner. Less competitive monitoring and more fostering of R4D partnership for desired output/outcome
12		Facilitator did a very good job but could have been more thorough in recapping more each step when they happen	same as 2	ensure strategy prioritization
13	sharing among participant+resource	3 days workshop is	no any comment	some consultants need to be

	persons on wheather information clamete context	enough		conducted before putting this impact pathways into action
14	all participant should participate in the activities of workshop	Time of workshop is enough	Need to inform the results of workshop to all participant	
15	the ways how to set up activities among 6 SEA countries	More time for plenary session		
16	NA	NA	An instruction on group dicussion should be written and distributeed to each participant. The chair of each group should provide a clear instruction on what we would like to to do. May be the facilitator do not get clear instruction on the topic as well	put more investments (financial resources). Not just in paper
17	A logical systematic way of developing an exstance impact pathway for programs (not projects or single interventions)	more time on the indentification of research gap	it'd be better if there is a concrete example (filled up tables/templates for the different for different activites). A definition of terms would have helped also	NA
18	Learning what NAMAS are	more time on specific conent of research; less time on outcome and impact	The outcome planning should be left to CGIAR and key partner	Plan is too large in scope and has some duplicate
19	linking: outcome->output->action->project->outcome	ok	keep up with the good work	find funding and networking
20	(1) There are many on-going platforms. There is lack of syneries of exchange in ideas, information... (2) People from difference	Discusin on CST - ready to be ... each country	ok	Develop concrete actions

	language			
21	Importance of CSA that address both adaptation and mitigation	More time for country presentation; Less time on impact pathway discussion	Balance needs for discussing on country specific issues and impact pathway exercises	Impact pathway need to be done on each country - specific basis keeping in mind agroecological, and other local specificities
22	Better understanding of the regional impact pathway; the workshop gives the opportunity to learn from country in term of climate-related actions and national regulatory	More time on group activity	Should send the instruction of group discussion to all participant ahead so that we can start brainstorming	Put all synthesis in one document and share; follow up through emails/meeting/report
23	Systematic of group discussion to come up with resolution are super; I know better what I should prioritize and communicate the country as far as research priority	Time arrangement have had properly divided. Perhaps a bit more time on research agenda	Should reduce heavy and very tempting meals	develop the full proposal; communicate relevant stakeholder of each country
24	Formation of group; constant monitoring and providing help to complete task in time	Time schedule is perfect; No change is needed	None, this is excellent	Question not clear to me
25	Enormous work/activities being undertaken of different country/institutes/partner on CC. Need for a logical way to coordinate all to achieve CCAFS objective	More time for the country's presentation	need involvement of development partner if you want national activities to come out	Platform collaboration and coordinator
26	complexity of incorporating Climate change into practice in agriculture - the need of system approach suitable for climate change	Need more time but shorter workshop (2 days)	Make a clear process and provide to all participant rather than only facilitators - Flow chart would be easier to follow	Analyse barriers along the pathway and how to switch the green lights at the barriers
27	Lack of economic research to support policy making process - > lead to unfeasible and inefficient policy design and implementation	More time for country presentation; Less time on group discussion	Need invite representative from ASEAN climate sector to participate workshop	Raise awareness to top level policy maker;

28	NA	Time was balance	Process was clearly oriented and communicated	Further identify the key partners for implementing the research action and impact pathway; Costing the proposed activities and limitations at CRP program
29	NA	More time on group activity/discussion	Make clear of process before doing the group activity/discussion	coordinate with stakeholder
30	New ideas, concept (CSA, CSV...)	Need more time for Q&A for presentation	Need more time for Q&A for presentation	
31	New concept: CSA, using handphone to be update with information and technical guideline for farmer...	OK	The presentation should be printed out in steps that participants can keep track with	Building the pilot model seems to be good way to put this impact pathway into action
32	Better understanding of the climate change scenarios in SEA; thinking of new projects and programs regarding to impacts of climate change on rice production in Vietnam; CSA	More time to discuss and propose specific programs and frameworks on climate change	propose more guidelines/toolkits to access and manage disaster risks caused by climate change	save our food and Earth under climate change
33	"behavior change" as framework to plan is useful tool. It will be facilitate and achieve the desired outcome and output	More time to explain (task of team/group leader) the mechanism of group activities	the team leader has a lot of responsibility to drive the process and achieve the desired outcome and output - it is very important that help "understand" on step by step process	Keep updating the status of actions
34	There was a wealth of experience in the room but no time to learn much each other work insight	More time is needed to develop solid joint proposal	Filling the box of frame seems to be driving the process at critical moment	Hopefully, good research ideas will be supported
35	To achieve scalable outcome, there is a need to focus on ensuring product reach	More time for country presentation and Q and A	May work on some flagships. It is impossible to list the prospect	follow up into concrete plans

	and use by end-user	afterward	in such a shorttime	
36	MRV systems as sets of benchmark sites across agroecosystem (and many other insight)	More time on country needs and activites; lesstime on outcome/output discussion	Impact pathway planning through different process (less participant); This kind of meeting to get input direct of specific ideas; Missed opportunity to talk about FP call, would have more free for self-organized meeting	Impact pathway to action - via FP3? Working with partner here?

The CCAFS SEA Impact Pathway and TOC

Figure 1. CCAFS SEA vision and outcomes.

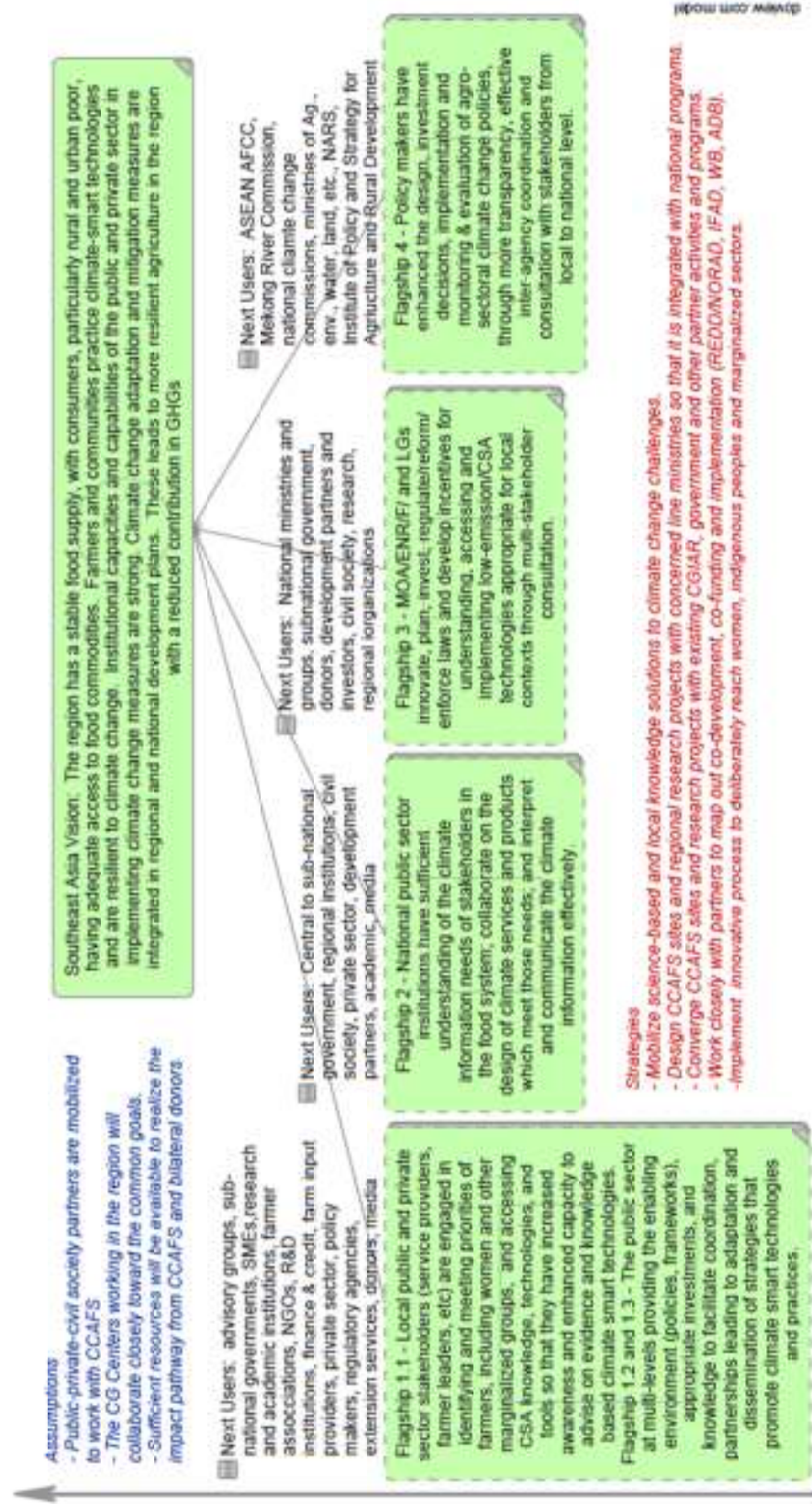


Figure 2. CCAFS SEA flagship 1 milestones and research actions.

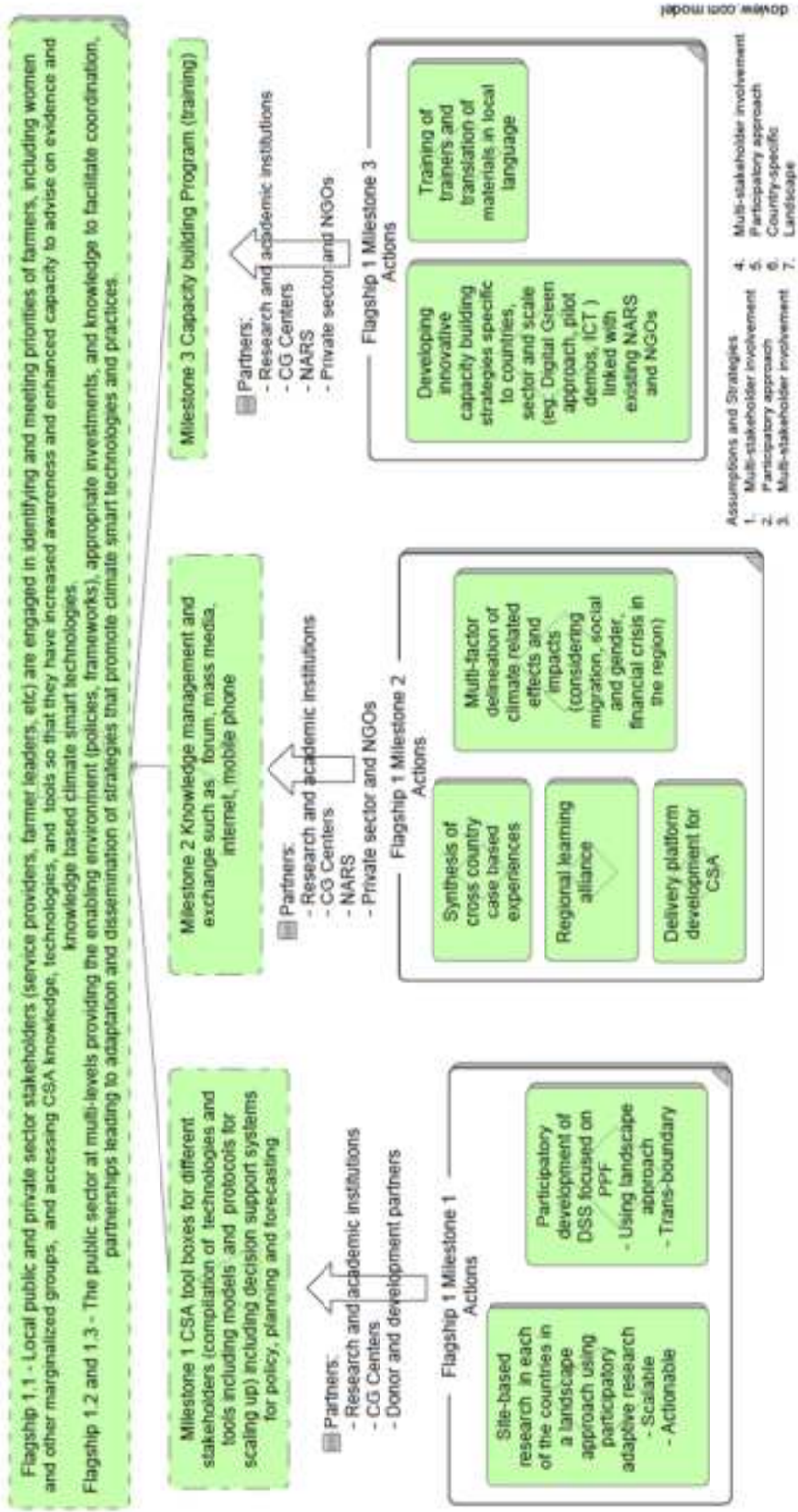


Figure 3. CCAFS SEA flagship 1 milestone 1 ongoing research and gaps.

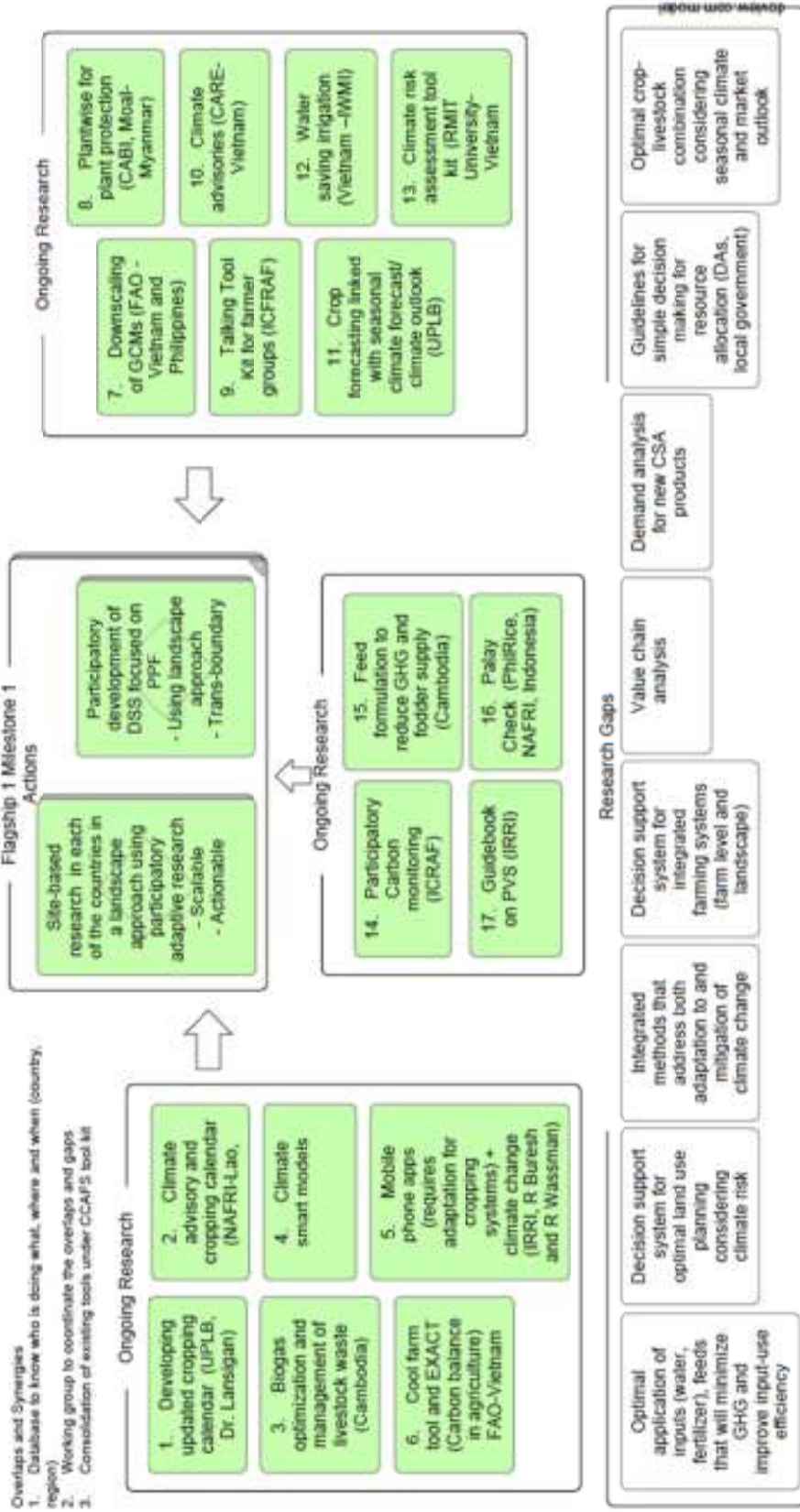


Figure 4. CCAFS SEA flagship 1 milestone 2 ongoing research and gaps.

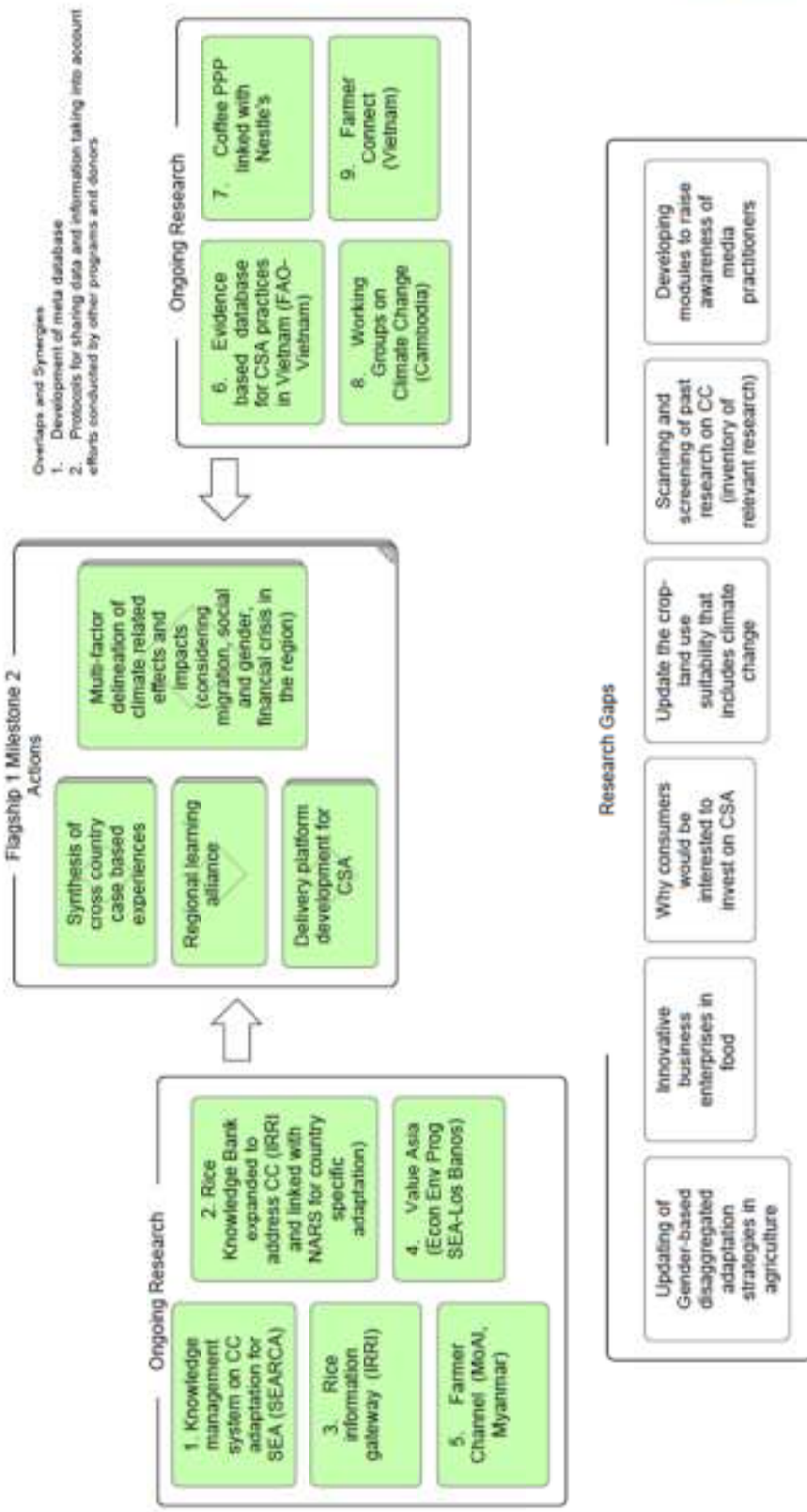


Figure 5. CCAFS SEA flagship 1 milestone 3 ongoing research and gaps.

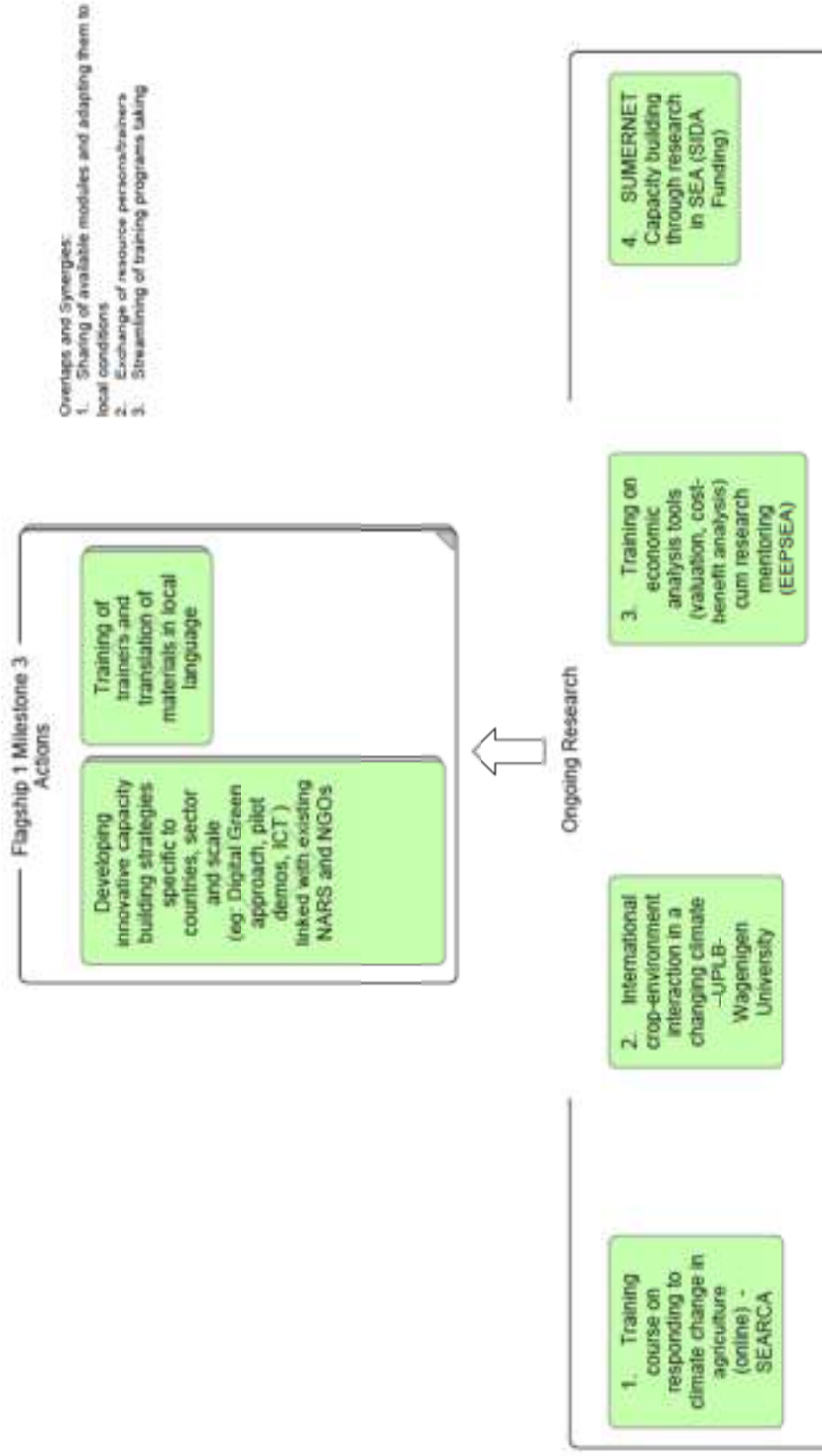


Figure 6. CCAFS SEA flagship 2 milestones, actions, ongoing research and gaps.

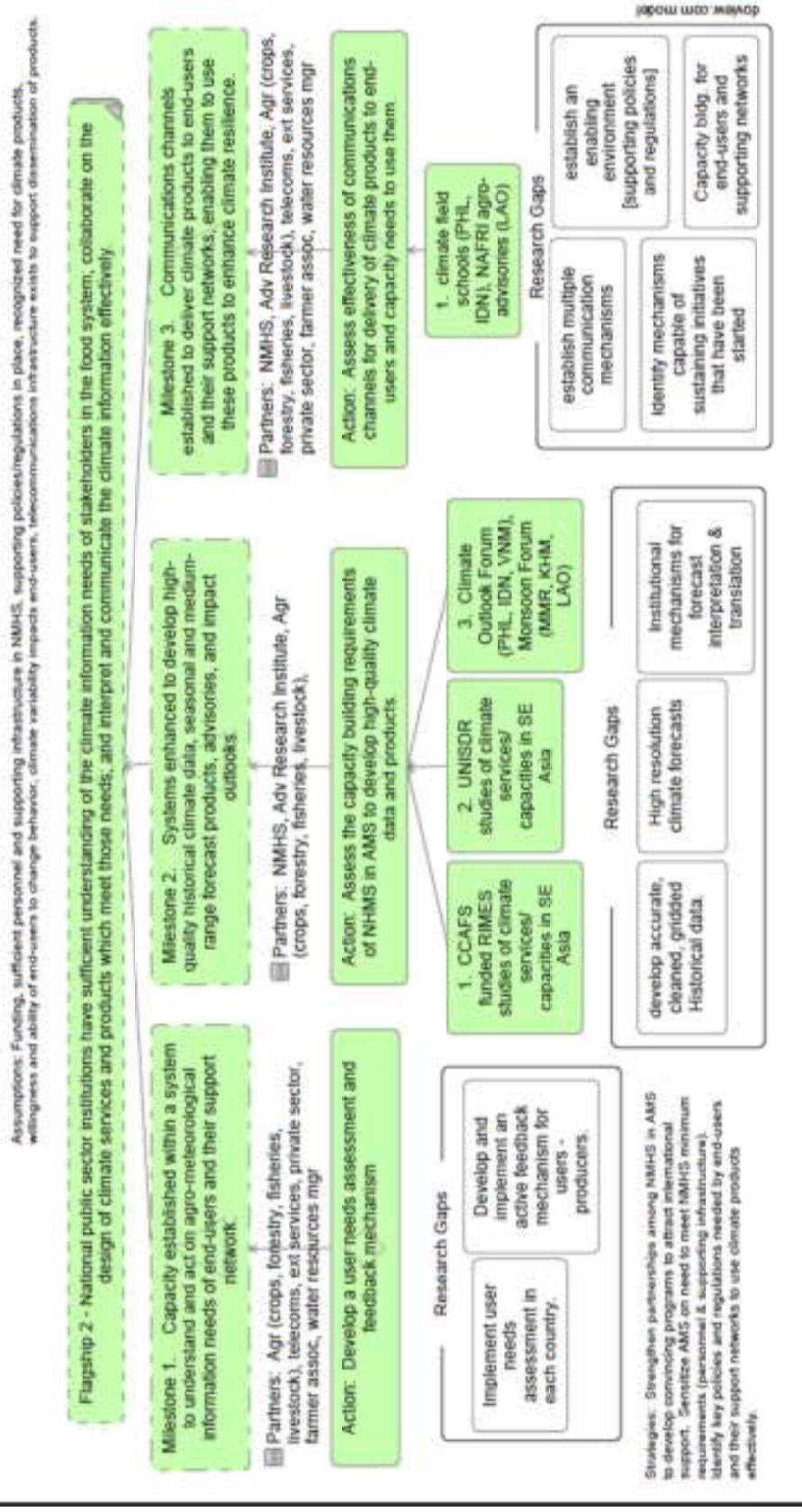
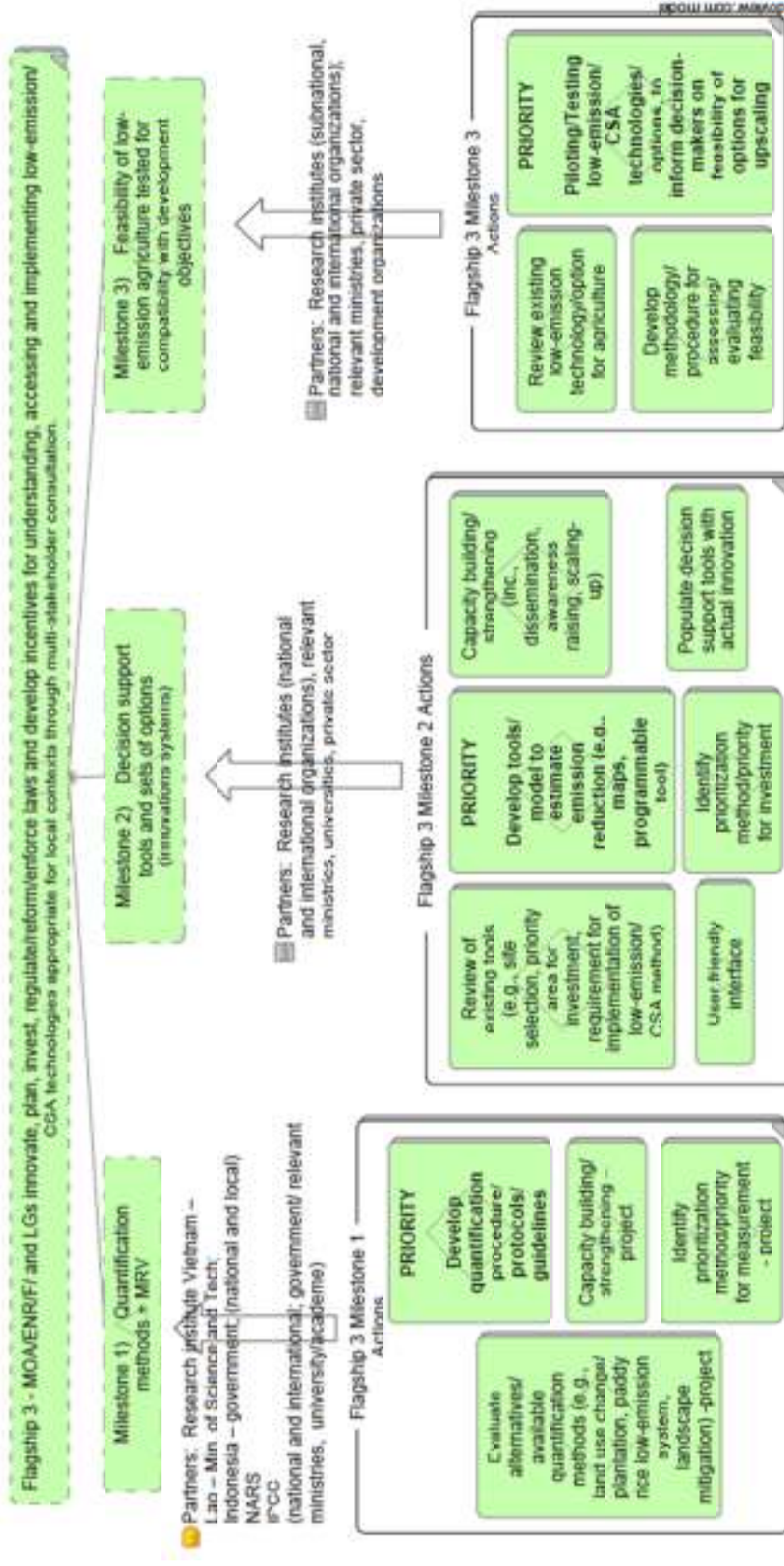
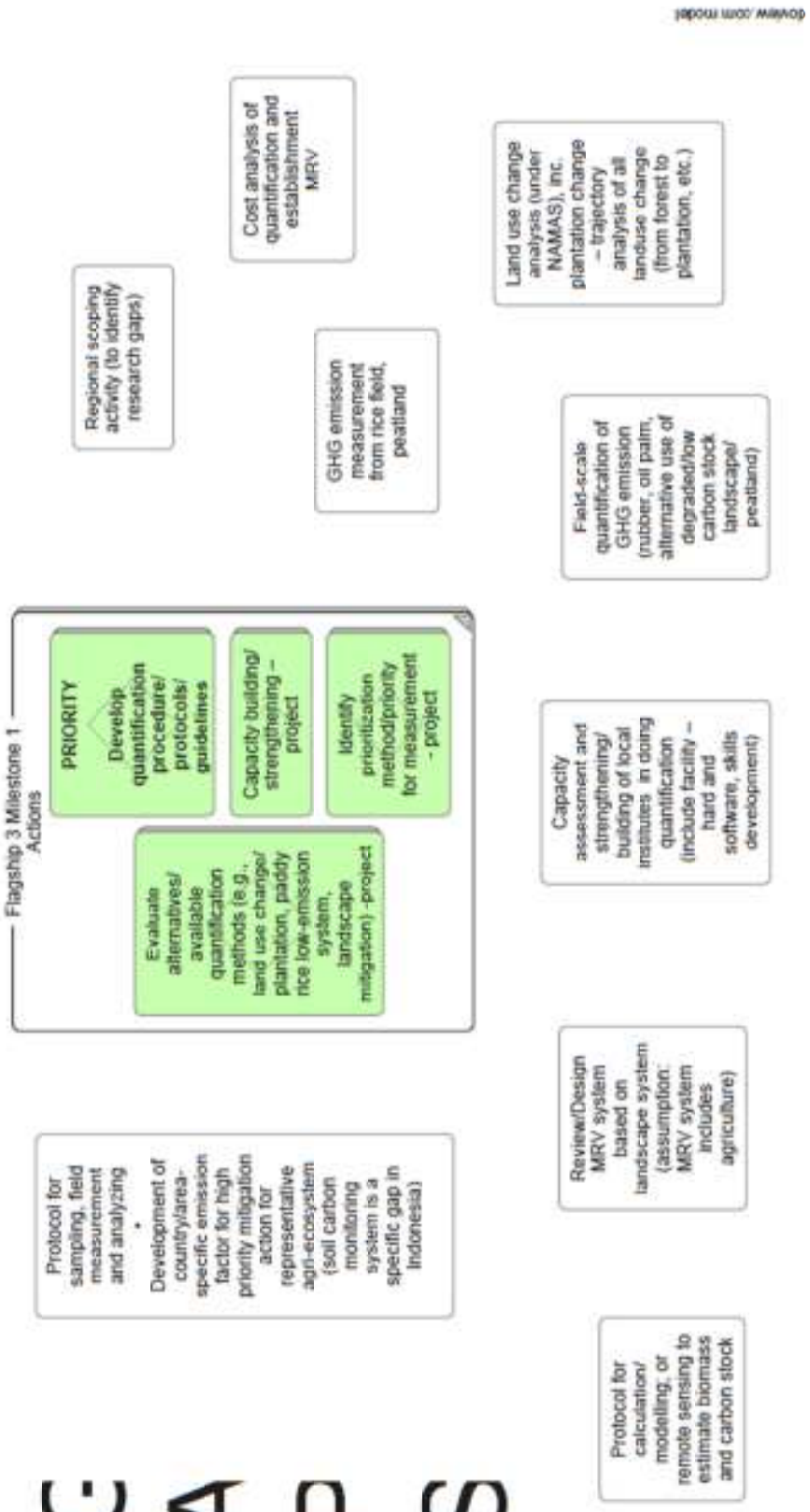


Figure 7. CCAFS SEA flagship 3 milestones and research actions.



G A P S

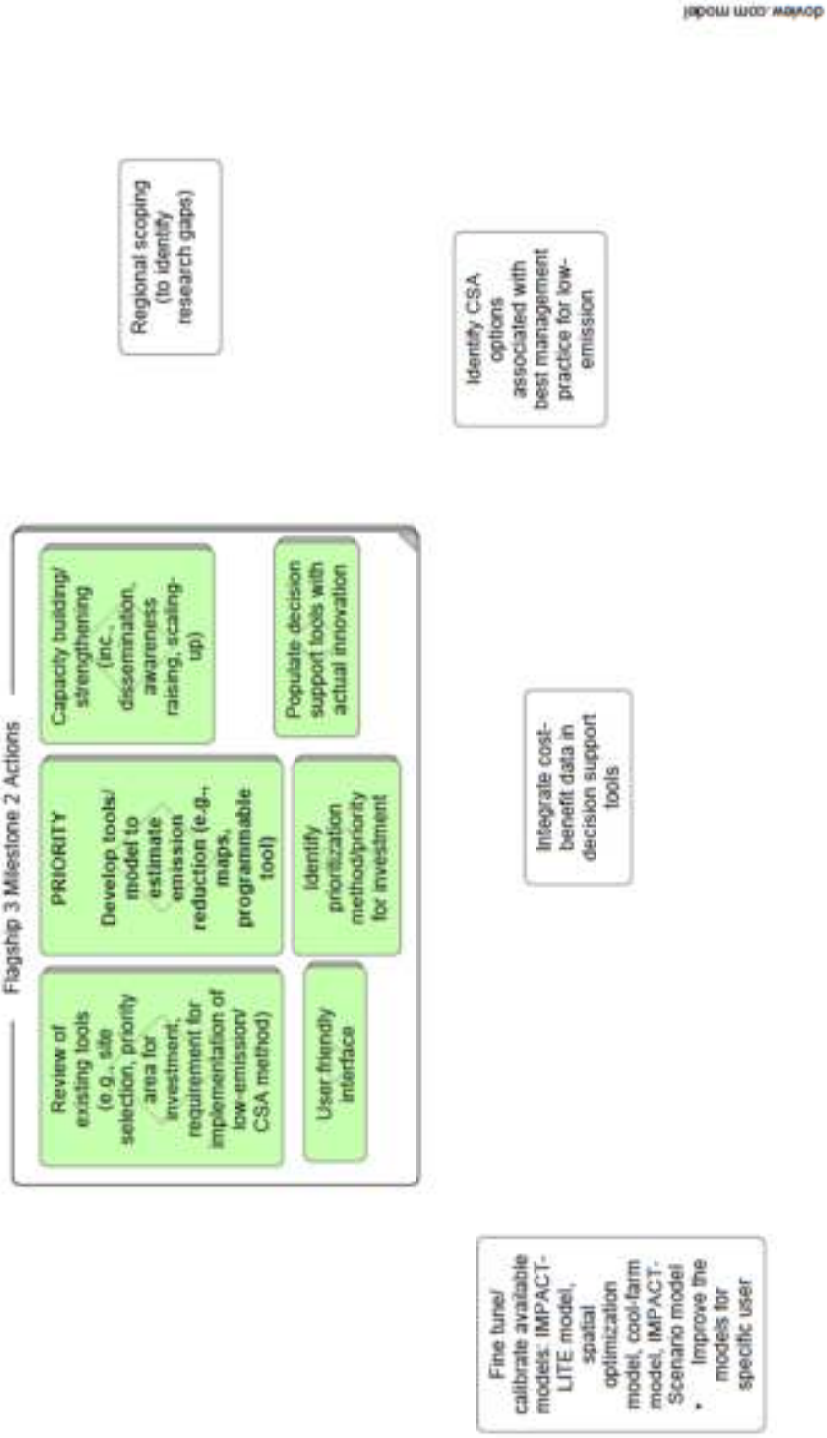
Figure 8. CCAFS SEA flagship 3 milestone 1 ongoing research and gaps.



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CAFS

Figure 9. CCAFS SEA flagship 3 milestone 2 ongoing research and gaps.



G A P S

Figure 10. CCAFS SEA flagship 3 milestone 3 ongoing research and gaps.

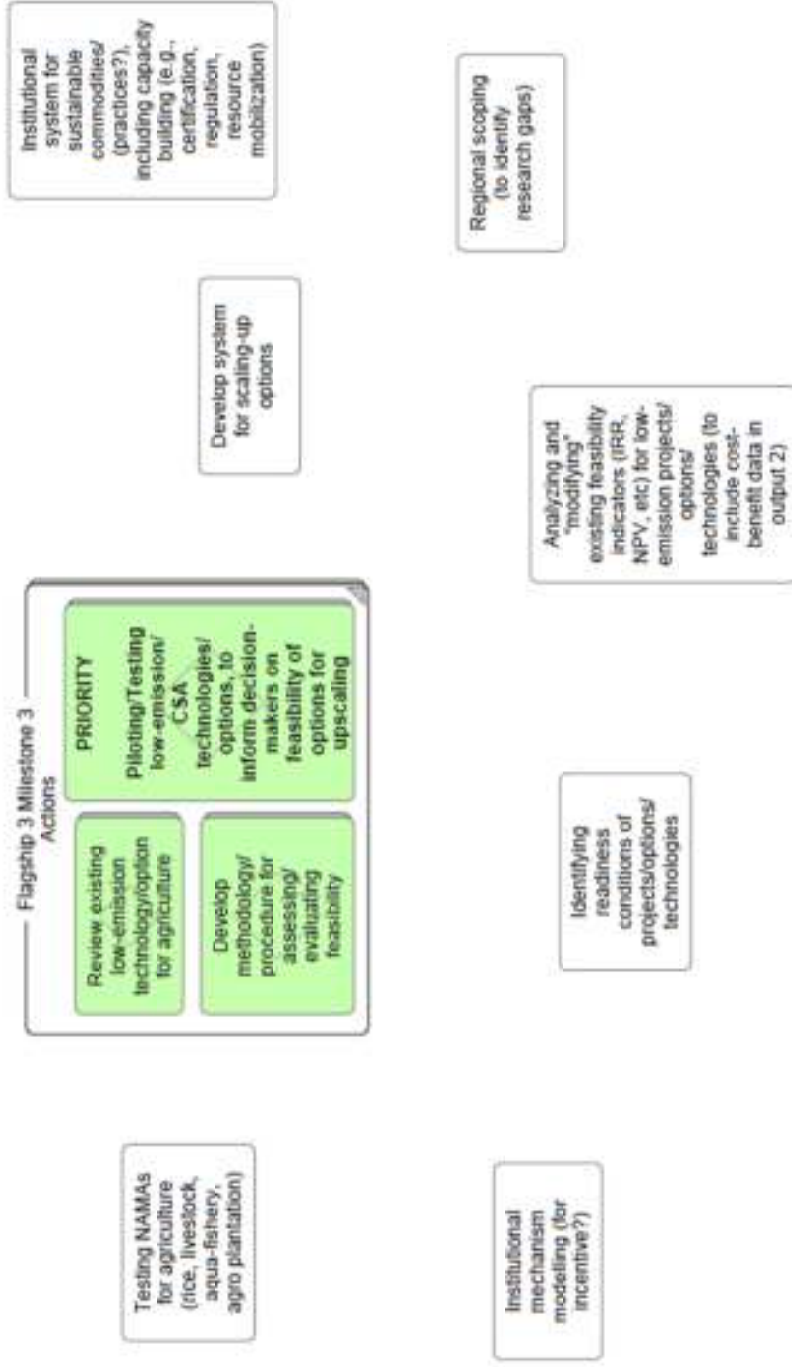


Figure 11. CCAFS SEA flagship 4 milestones and research actions.

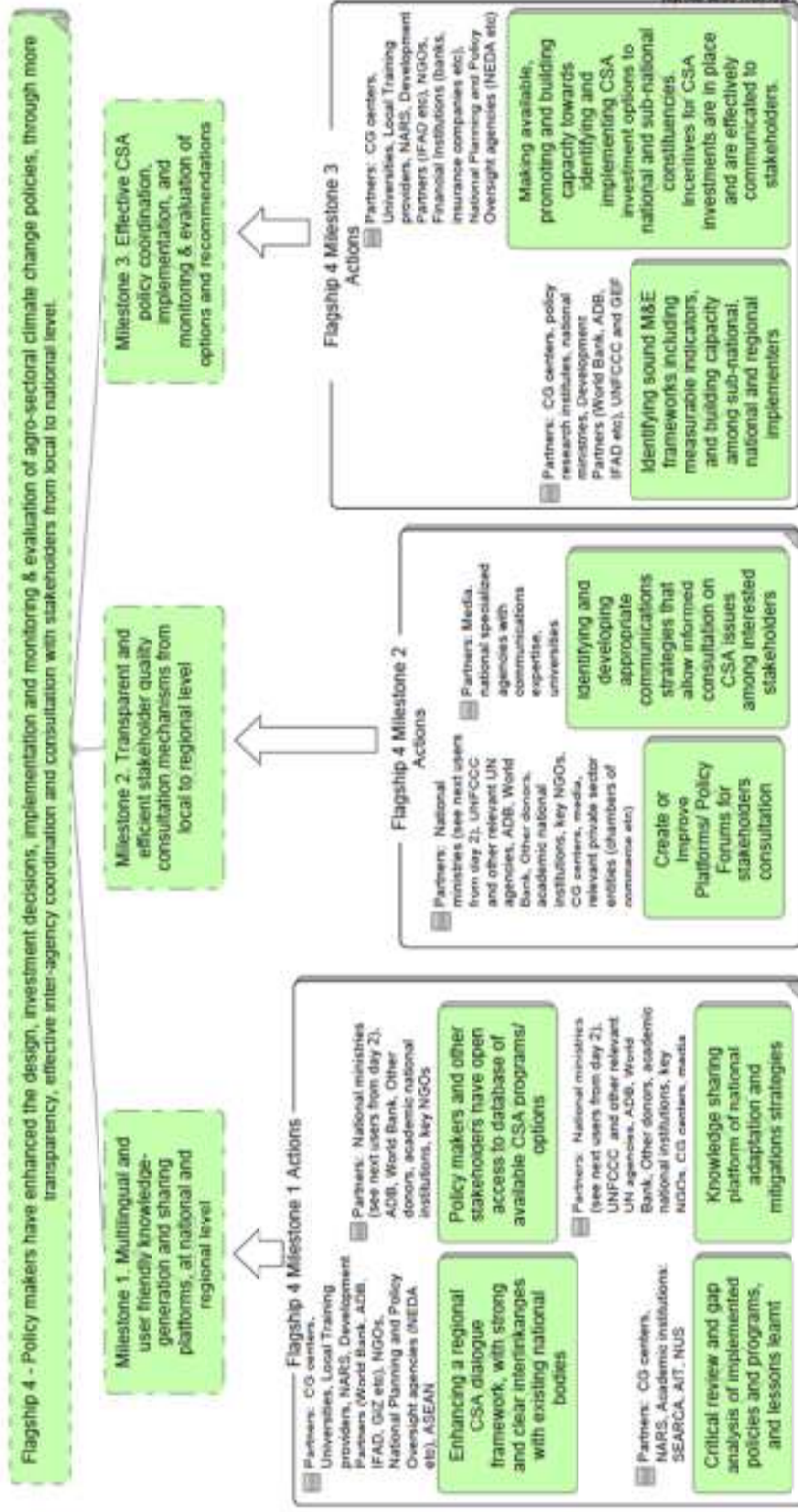
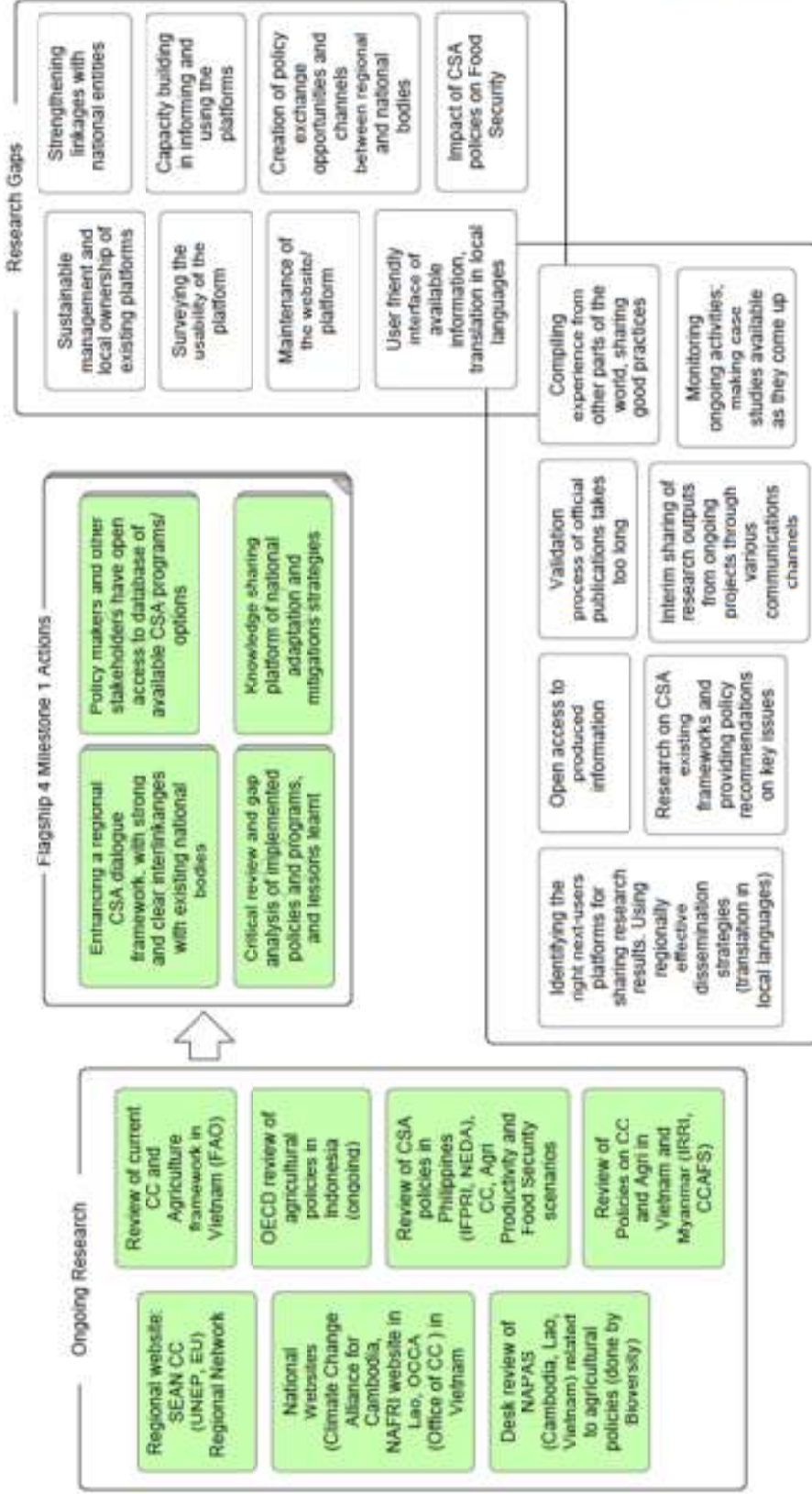


Figure 12. CCAFS SEA flagship 4 milestone 1 ongoing research and gaps.



dovey.com model

Figure 13. CCAFS SEA flagship 4 milestone 2 ongoing research and gaps.

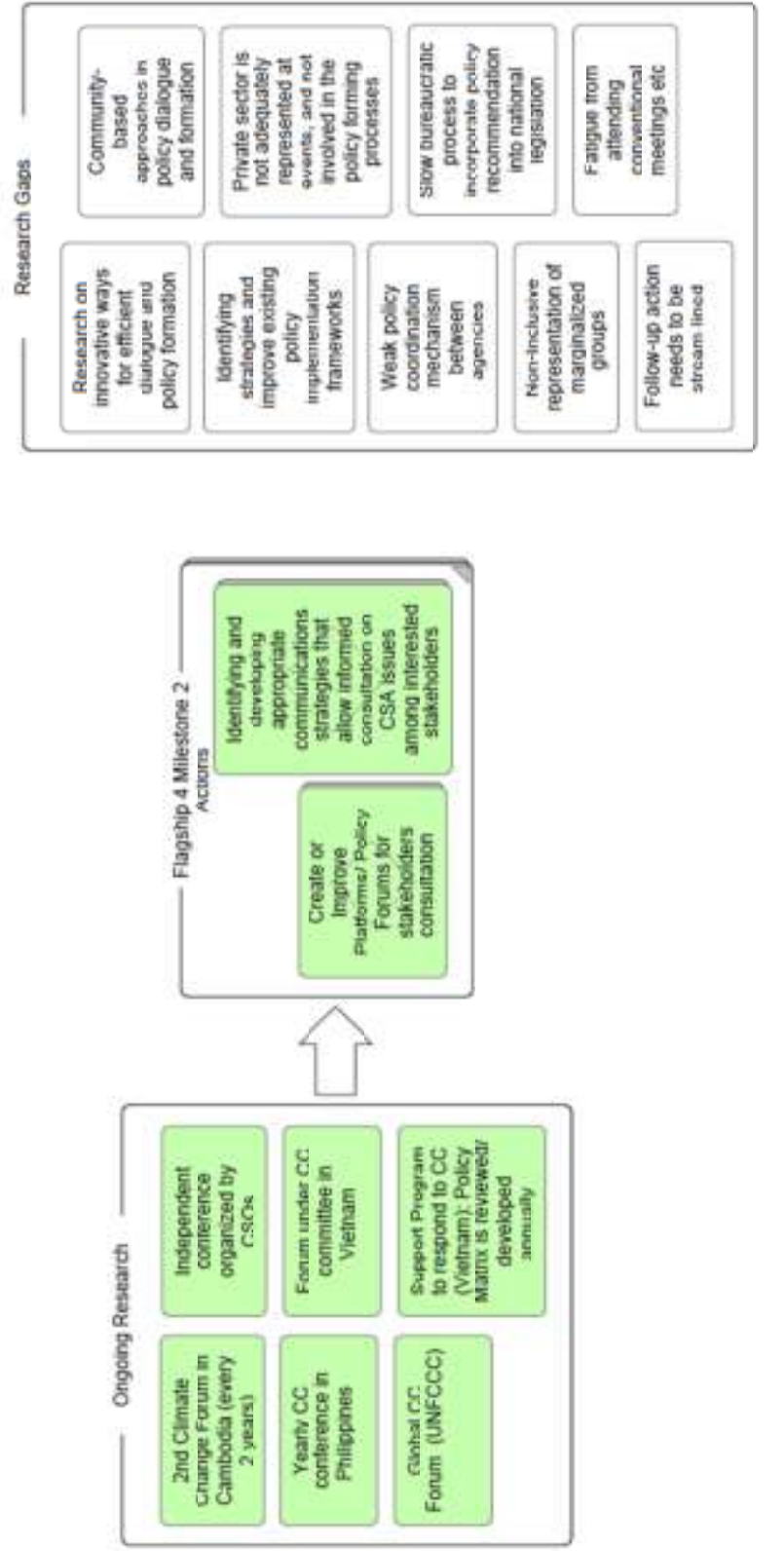
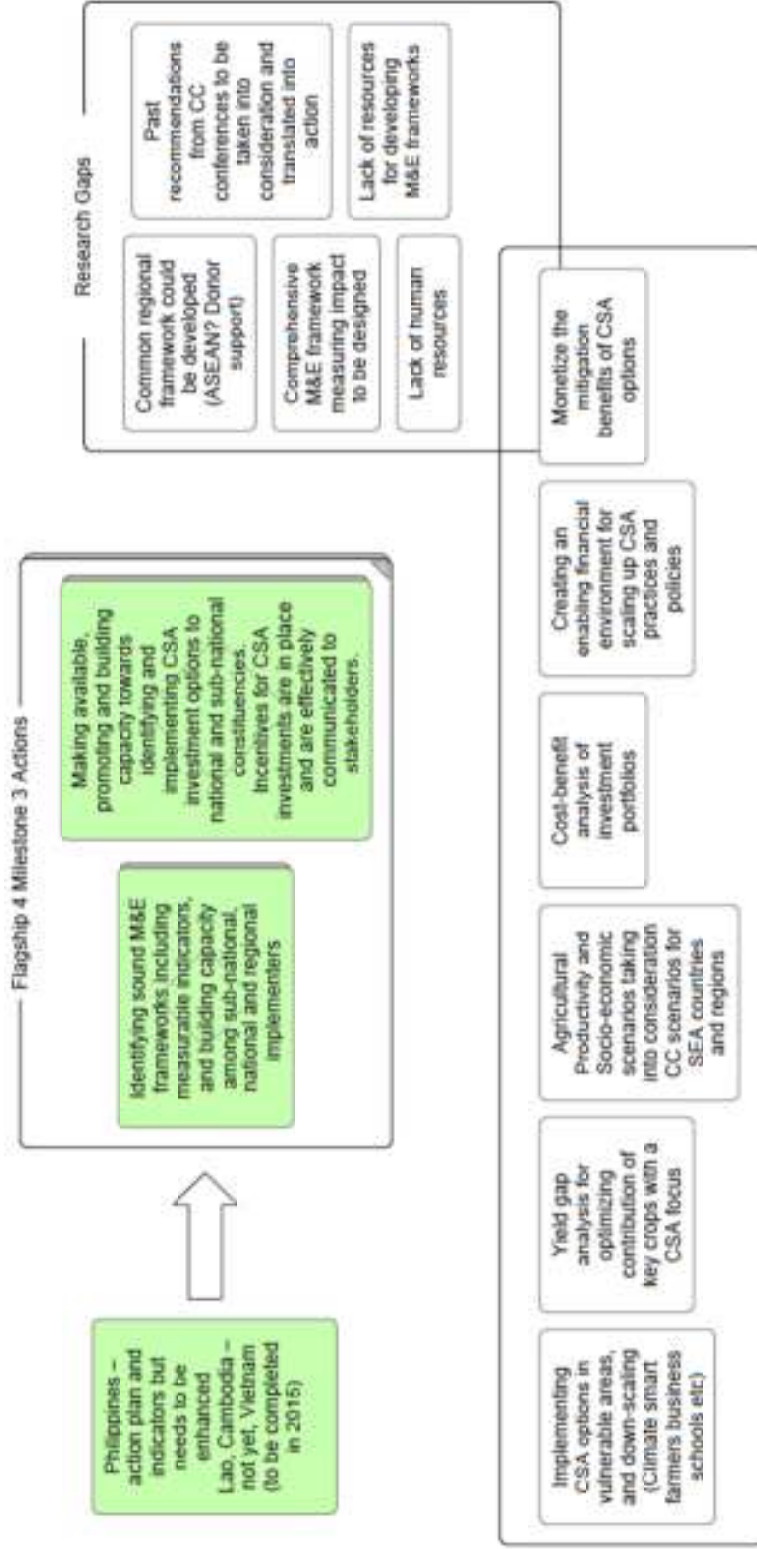


Figure 14. CCAFS SEA flagship 4 milestone 3 ongoing research and gaps.



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