

Workshop summary: Improving GHG inventories from livestock in south & south-east Asia

Overview

The workshop sought to demonstrate the benefits of higher Tier greenhouse gas (GHG) inventories for livestock systems, and to identify the steps needed for participating countries to improve their inventories consistent with their national circumstances, priorities and capacities.

The workshop took place 23-25 September 2015, at the Pullman Hotel G, Bangkok, Thailand. The workshop was attended by 14 participants representing 6 countries from south and south-east Asia (Thailand, Indonesia, Malaysia, Philippines, Sri Lanka, Vietnam) as well as technical and policy experts from New Zealand, Canada, Colombia and Japan.

The workshop was sponsored by the New Zealand Government in support of the objectives of the Global Research Alliance on Agricultural Greenhouse Gases (GRA), and hosted by the Government of Thailand. Key activities of the workshop were:

- 1) demonstrating the generic benefits of higher Tier inventories to capture improvements in productivity/efficiency and reduced emissions intensity
- 2) identifying the generic steps needed to move from Tier 1 to higher Tier inventories
- 3) assisting countries in mapping the individual steps to achieve this, taking into account
 - country-specific circumstances, benefits and broader policy goals
 - country-specific priorities for inventory improvements
 - measurements, activity data and national systems for producing inventories including science-policy linkages.

Outcomes and next steps

Participants welcomed the workshop and said that it would support their domestic efforts to improve estimation of GHG emissions from livestock and identification of opportunities to improve production efficiencies and productivity, and to capture the reductions in emissions intensities resulting from such production changes.

The following source categories were identified as prime targets for development of advanced inventories: beef cattle, dairy cattle, pig manure, chicken manure.

Participating countries identified a range of domestic priorities and next steps (see below), which would be led by countries themselves, as well as a set of specific actions where they would particularly benefit from support and inputs from the Livestock Research Group of the GRA, and of technical and policy experts from countries with advanced livestock inventories.

Individual country plans:

The notes below represent current aspirations of participating countries as stated during the workshop. Activities will be revised and progressed within the means, national circumstances and further policy developments in each country.

Indonesia offered to host a regional workshop in July 2016, to allow countries from the region to compare notes on their achievements, success factors and remaining barriers to implementation of advanced inventories. All countries present at the workshop welcomed this offer and indicated their strong interest in participating in this next meeting.

Thailand:

- Tier 2 priorities: beef cattle, pig manure
- inventory is prepared by Ministry of Natural Resources and Environment (MoNRE) but Department of Livestock Development, Ministry of Agriculture and Cooperatives (MoAC) can provide input to support development of higher Tier inventory
- develop a training course on inventory system to MoAC regional centres (April 2016); focus on structure and required information to inform regional data collection for beef and dairy systems; request GRA expert input/support
- cross-agency workshop involving MoNRE, MoAC and universities (May 2016); request GRA expert input/support
- link inventory development with 5-year agriculture development plan (MoAC, 2017-2021), which will be developed between October 2015 and June 2016
- continuous support to link GHG research with productivity and development plans; ensure integration across plans at policy level

Indonesia:

- Tier 2 priorities: beef cattle and poultry manure
- will consolidate efforts under Ministry of Agriculture
- series of meetings with national stakeholders
- domestic workshop (April 2016) focusing on possible inventory structures for poultry and beef, poultry supply chain, animal nutrition; request GRA expert input/support

Malaysia:

- can utilize existing inventory working group (led by MARDI reporting to NRE), but efforts to obtain funding for Tier 2 development have been unsuccessful in the past
- demonstrating policy benefits/productivity gains related to Tier 2 critical, but no obvious simple mechanisms to increase productivity
- would fit with Low Emissions Capacity Building programme and demonstrate green agriculture policy credentials
- seed funding necessary for background work and coordinating progress
- seeking GRA expert input to define/refine inventory structure for poultry and beef, and raise profile/benefits of inventory improvements

Philippines:

- Tier 2 priorities: buffalo (Carabao)
- internal workshop coordinated by Philippine Carabao Centre (first quarter 2016) ; request GRA expert input/support

Sri Lanka:

- Tier 2 priorities: dairy cattle
- Tier 1 inventory to be completed by December 2015, Tier 2 would present next step to capture productivity improvements
- apply Tier 2 approach to only a few farms with detailed data, demonstrate benefits from applying Tier 2 before developing national approach
- build on workshop under the Climate and Clean Air Coalition workshop (November 2015) on reducing enteric methane emissions to build policy connections; maintain links with CCAC project and combine inventory development with productivity improvements resulting from this project
- looking for GRA expert input for guidance on inventory development, and financial assistance with networking; raise awareness/appreciation of benefits of advanced inventories with policymakers

Vietnam:

- Tier 2 priorities: beef cattle, pig manure (essentially develop the framework and demonstrate outcomes, but leave to policymakers to adopt)
- possibly draw on Indonesian development of poultry manure inventory
- seeking GRA expert input to develop inventory (expert workshop November 2015) and raise profile with policymakers
- revise/validate approach by March 2016

Generic measures to support next steps within countries:

- **sharing of inventory structures and system characterizations** that support the development of Tier 2 inventories (beef, dairy, pig and chicken manure)
- **development and distribution of generic, simple software to calculate Tier 2** emissions on an exploratory basis, using simple default structures for dairy, beef and pig and poultry manure systems
- **publication of supporting document** on (policy) benefits of higher Tier inventories
- **development of a tropical feed library** for ruminants, sharing of regional methane yields for different feeds
- **expert input and review of methods** for:
 - inventory structures
 - methods for obtaining or inferring detailed activity and productivity data, using limited existing data
 - consistent measurement methods for emission factors
- **increasing connections between agencies** (link stakeholders, raise awareness/ambition, clarify priorities, generate support) and between science and policy levels through in-country workshops, assisted by inputs from external experts
- **fostering government-to-government (south-south) connections**

Participants suggested that a dedicated wiki-type website, which would allow participants to exchange information, share data and seek advice, would be very helpful.

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List of Participants

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Agenda

Day 1 (23 September 2015)

Time	Topic	Speaker(s)	Chair
9:00	Welcome, introductions	Harry Clark	Harry Clark
9:15	Welcome message from Government of Thailand	(tbc)	
9:30	Overview and goals for the workshop	Andy Reisinger	
9:45	Country overview presentations (15 minutes per country): <ul style="list-style-type: none"> • overview of main agricultural (livestock) production systems, products • importance of livestock for food security, including policies for food self-sufficiency • key trends in livestock product output and productivity; social, environmental or market drivers for further livestock sector development • key policies affecting livestock production (total and productivity) and agencies responsible for relevant policies • current national climate change policy objectives and any links of climate policies with agriculture and livestock production/policies • current (livestock) emissions inventory – latest estimates, frequency of updates, agencies responsible for compilation 	Country participants: Thailand Indonesia Philippines	
10:30	MORNING TEA		
11:00	Country overview presentations (continued)	Malaysia Sri Lanka Vietnam	
11:45	Overview of livestock GHG inventories: Tiers, requirements, IPCC definitions/guidance	Brian McConkey	
12:30	LUNCH		

13:30	Benefits of an advanced inventory: science and policy perspectives from New Zealand	Harry Clark, Andrea Pickering	Andrea Pickering
14:15	Round-table discussion of current status, efforts and barriers to developing higher Tier livestock emissions inventories	Country participants	
15:00	AFTERNOON TEA		
15:30	Key steps in changing the livestock inventory structure to a higher Tier	Harry Clark	Andy Reisinger
16:00	Discussion within each country to identify subsectors that would most benefit from moving to a Tier 2 structure, based on absolute emissions, trends in productivity/intensity, and fit with broader policy objectives	Country participants, assisted by external experts	
16:30	Report-back from each country (5 minutes each). If you could shift just one part of your livestock emissions inventory to a higher Tier: <ul style="list-style-type: none"> • which aspect/element of the livestock inventory would it be? • why? • what would be the minimum data requirements? 	Country participants	
17:00	CLOSE OF DAY 1		

Day 2 (24 September 2015)

Time	Topic	Speaker(s)	Chair
9:00	Detailed look at higher Tier inventories: activity data; introductory presentation, open discussion of scope and mechanisms for countries to improve activity data	Brian McConkey; all participants	Harry Clark
9:45	Detailed look at higher Tier inventories: emission factors, use of defaults, existing datasets and their validation; introductory presentation, open discussion of scope and mechanisms for countries to improve emission factors	Harry Clark; all participants	
10:30	MORNING TEA		
11:00	Existing datasets: nutrient requirements and energy content of feeds	Tomoyuki Suzuki	Brian McConkey
11:45	Introduction followed by discussion within each country: identification of key trends in livestock systems that would be better reflected by a Tier 2 inventory, based on FAO data (provided by NZAGRC) and other data provided by participants	Andy Reisinger; country participants	
12:30	LUNCH		
13:30	Experience with livestock NAMA development and links with broader development goals and inventory: experience from Colombia	Adriana Pinto Brun	Andrea Pickering
14:15	Construction of Tier 2 inventory for selected livestock sector/system, using existing information and data; introduction by Andy Reisinger followed by inventory construction within each country	Country participants, assisted by external experts	
15:15	AFTERNOON TEA		
15:45	Construction of Tier 2 inventory within each country (continued)		
17:00	CLOSE OF DAY 2		
19:00	DINNER HOSTED BY THE GOVERNMENT OF THAILAND (room Scarlett 1)		

Day 3 (25 September 2015)

Time	Topic	Speaker(s)	Chair
9:00	<p>Report-back from countries on conclusions from day 2:</p> <ul style="list-style-type: none"> • key insights and issues from inventory construction • additional data requirements • key knowledge gaps <p>Round-table discussion on options to fill knowledge gaps, individually or collectively through collaborative research and data gathering/compilation projects</p>	Country participants, external experts	Andy Reisinger
10:30	MORNING TEA		
11:00	<p>Round-table discussion on policy benefits and links with development goals. Based on the inventories developed and the options considered:</p> <ul style="list-style-type: none"> • what is the biggest barrier to implementing a Tier 2 inventory • who would most benefit from adoption of a Tier 2 inventory • who would be responsible for compiling data and supporting research • who would be responsible for producing the inventory • synergies between addressing knowledge gaps for inventory and broader development goals 	Country participants, external experts	Harry Clark
11:45	<p>Next steps: what support would countries need to advance towards a higher Tier? Potential for collaborative regional projects and links with existing programmes. Course evaluation</p>	Country participants	
12:30	LUNCH		
14:00	FAREWELL, CLOSE OF WORKSHOP		