

# South-East Asia Capacity Building Workshop

## Summary of outcomes

The Governments of Thailand and New Zealand jointly hosted a 2-day workshop on measurement and mitigation of greenhouse gases in South-East Asian livestock systems, on 14/15 March 2012 in Bangkok, preceded by a field trip on 13 March to visit a CDM project that generates biogas from pig manure. Four countries participated in the workshop: Thailand, Indonesia, Malaysia and Viet Nam.

The workshop was held under the auspices of the Livestock Research Group (LRG) of the Global Research Alliance, as part of a broader set of activities by the LRG to build regional capacity in developing countries to understand, estimate and identify opportunities for reducing the intensity of greenhouse gas emissions from livestock. The workshop was sponsored by the New Zealand government through its Ministry of Agriculture and Forestry as part of its support for the Global Research Alliance. Scientific inputs and discussions at the workshop were facilitated by the New Zealand Agricultural Greenhouse Gas Research Centre on behalf of the LRG, with expert inputs from a broad range of Alliance member countries and other relevant international organisations (see final agenda in Appendix 1, and list of workshop participants in Appendix 2).

The workshop aimed to improve understanding of livestock systems in the region, showcase existing research programmes and document critical data, knowledge and capability gaps in order to identify activities that would help enhance the region's ability to measure, monitor and develop options to mitigate greenhouse gas emissions from livestock systems in a sustainable manner. A key goal of the workshop was to identify opportunities for future collaboration and coordinated capacity building activities in livestock mitigation research across South-East Asia countries.

The workshop participants identified and agreed a set of four activities that would help build regional capacity and advance knowledge on emissions and mitigation options:

- 1) **Inventories:**
  - a) to develop a common classification of production systems that better represents regional practices and existing activity data, and
  - b) to identify key areas within those production systems where region/country-specific emission factors could be developed via measurements, and to undertake priority measurements across the region
- 2) **Mitigation (feed systems):** to explore options for improved animal feeding to improve productivity and reduce emissions intensity, based on locally relevant feeding systems, species, and pasture management options
- 3) **Mitigation (feed additives):** to identify potential locally appropriate feed additives to mitigate enteric CH<sub>4</sub>
- 4) **Mitigation (manure):** to explore options for improving manure management systems (both biogas and manure treatment), with consideration of options that suit small-holder farms

## Next steps

- Identification of national contact points for each activity in each of the four participating countries from the region, to lead national input into the drafting of concept notes
- Development of a concept note for each activity to summarise the goals, benefits, existing capacity, relevant institutions and individuals, and critical capacity and support needs in each country and collectively in the region (potentially including other countries from south-east Asia that were unable to attend the workshop).

The initial concept notes would form the basis for developing full research proposals, identify institutions and individuals capable and willing to lead research activities and coordinate regional participation, and define and attract funding from within participating countries as well as any relevant regional funding and development agencies to support identified research projects.

The development of concept notes would be led by one country, based on inputs from all participating countries in the region and drawing upon expert advice from other LRG member countries as necessary. The countries that agreed to lead and coordinate the development of a concept note for each activity are Thailand (inventories), Indonesia (mitigation – feed systems), Malaysia (mitigation – feed additives), Viet Nam (mitigation – manure).

Participants noted that the concept notes would be closely connected and interlinked because knowledge and tools developed through work on inventories would provide an important platform for exploring various mitigation options. Any resulting research projects would not necessarily be separate for each of the four activities but would more likely integrate several activities into a single integrated research project.

## Timeline and initial responsibilities

Participants agreed that

- national contact points for each activity would be identified within one month from the end of the workshop (16 April 2012), and
- concept notes for each activity would be developed within three months following identification of national contact points for each activity (16 July 2012).

Representatives from the four countries present at the workshop undertook to identify suitable national contact points by 16 April to lead and contribute to the development of concept notes for each activity. Those representatives are [Dr Vanida Khumnirdetch](#) (Thailand), [Dr Bess Tiesnamurti](#) (Indonesia), [Dr Shanmugavelu Sithambaram](#) (Malaysia), and [Dr La Van Kinh](#) (Viet Nam). It was noted that countries and their lead individuals at this early stage only took responsibility for developing concept notes, not necessarily for developing or leading full regional research projects.

[New Zealand](#) offered to support the process of drafting concept notes by developing a common template, and by supporting communication between regional participants and any other external experts. Participants were also encouraged to make immediate use of existing capacity building opportunities such as they exist under the [LEARN and GRASS fellowship scheme](#) offered by New Zealand, especially where this would support the development of more detailed research proposals.

## Workshop on measurement and mitigation of greenhouse gases in South-East Asian livestock systems: building capability to meet the challenge

13-15 March 2012  
Bangkok, Thailand

### OVERVIEW AND FINAL AGENDA

#### Background

One of the priorities for the Global Research Alliance's Livestock Research Group is to help build countries' capacity to measure and mitigate greenhouse gas emissions from livestock systems, without compromising productivity. The Group has agreed that a series of regional technical workshops to identify opportunities for capability building and increasing scientific expertise are an important part of this work area.

The first workshop in this series is for the South-East Asia region and is being held in Bangkok, Thailand, 13-15 March 2012. It is being hosted by the Governments of New Zealand and Thailand. It begins with an optional fieldtrip, followed by a two-day workshop. Other workshops are being planned for South-Asia and sub-regions of Africa. Collectively, these events will build off similar ones held in the Latin American region in 2008 and 2009.

#### Purpose of the workshop

The South-East Asian workshop will improve understanding of the diversity of livestock management systems in the region, the greenhouse gas emissions and the special characteristics of those systems. It will showcase existing research programmes and document critical data, knowledge and capability gaps in order to identify activities that would help enhance the region's ability to measure, monitor and develop options to mitigate greenhouse gas emissions from livestock systems in a sustainable manner. A key goal of the workshop is to identify opportunities for future collaboration and coordinated capacity building activities in livestock mitigation research across South-East Asia countries.

## Agenda

### Wednesday 14 March 2012: WORKSHOP – DAY ONE

Time	Session	Presenter/s
8.30-9am	<b>Registration and welcome coffee</b>	
<b>Session 1</b>	<b><u>Introduction and objectives of workshop</u></b>	
9:00am	Welcome and introduction – including overview of why livestock GHG emissions are important for the region	Representative of the Government of Thailand
9:15am	Overview of the Global Research Alliance and its Research and Cross-Cutting Groups	Hayden Montgomery (Alliance Secretariat)
9:30am	Presentation on diversity of livestock systems in the S.E. Asia region, including identification of main emission sources, drivers of future emissions and interactions with other aspects of agriculture (e.g. mixed systems)	Mario Herrero (ILRI)
10:00am	Objectives of workshop, building on survey of current activities and research opportunities identified in regional survey	Harry Clark (NZ)
<b>10:15-10:45am</b>	<b><i>Refreshment break</i></b>	
<b>Session 2</b>	<b><u>Estimation and Measurement and current state of inventory compilation in target countries</u></b> – inventory methodology, role of emission factors and activity data <ul style="list-style-type: none"> <li>• Sources of data, proxies and gap filling by expert judgement</li> <li>• Quality and uncertainty assessment</li> <li>• Land use and soils (Remote sensing and GIS techniques)</li> <li>• Population characterisation</li> <li>• Link to ability to monitor mitigation</li> </ul>	
10:45am	IPCC greenhouse gas inventory methodology for agriculture including: overview of the tiered approach, sources and categories of gases, methods of estimation, etc	Global Research Alliance Inventory & Measurement Cross-Cutting Group Brian McConkey (Canada)
11:15am	Sources of statistics and activity data for specific livestock systems in the region, including national sources, ILRI, FAO, other	Mario Herrero (CGIAR - International Livestock Research Institute)
11:30am	National compilation tools - Agriculture and Land Use (ALU) Greenhouse Gas Inventory Software Program	Amnat Chidthaisong (King Mongkut University, Thailand)

11.45am	Country overviews of current knowledge, methods & challenges for measurement and estimation of emissions (15 minutes per country including questions of clarification):  Thailand Indonesia	<p>One speaker per country:</p> <ul style="list-style-type: none"> <li>• Known emission trends and drivers, including projections</li> <li>• State of inventory and methodology</li> <li>• Critical gaps and options for addressing them</li> <li>• Synergies of inventory work with improving productivity and increasing management options</li> </ul> <p>(Chair: Harry Clark)</p>
<b>12:15-1:15pm</b>	<b>Lunch break</b>	
1:15pm	Malaysia Vietnam	
1:45pm	Round-table discussion to clarify issues, gaps and opportunities and potential for regional collaboration to improve inventories	
2:30-2:50pm	IPCC Emissions Factor Database	Nalin Srivastava (IPCC TFI Technical Support Unit)
<b>2:50-3:20pm</b>	<b>Refreshment break</b>	
<b>Session 3</b>	<b>Measurement</b> – further development and improvement of emissions factors, measurement protocols, up-scaling to improve national inventories	
3:20-3:40pm	Enteric fermentation – SF6, respiration chambers, other	Roger Hegarty (Australia) Cesar Pinares (NZ)
3:40-4:00pm	Nitrous oxide from soils – chambers, modelling, other	Dave Chadwick (UK) Tim Clough (NZ)
4:00-4:20pm	Emissions of methane and nitrous oxide from manure	Julio Mosquera (Netherlands) Dave Chadwick (UK)
4:20-4:40pm	Carbon stocks in soils	Brian Wilson (University of New England, Australia)
4.40-5:20pm	Individual country research opportunities and capability to improve emissions factors, measurement protocols and up-scaling to improve national inventories. Presentations with discussion (10 minutes per country)	One speaker per country
5:20-6:00pm	General discussion & summary of day	(Chair: Harry Clark)
<b>6.15-7.15pm</b>	<b>Reception: Drinks and nibbles hosted by NZAGRC (38<sup>th</sup> floor)</b>	

## Thursday 15 March 2012: WORKSHOP – DAY TWO

Time	Session	Presenter/s
8.30-9am	<b>Welcome coffee</b>	
<b>Session 4</b>	<b>Mitigation</b> - introduction and practices and technologies for mitigation of specific source categories for enteric fermentation, emissions from manures, nitrous oxide from soils, soil carbon storage	
9:00-9.20am	Overview and review of mitigation - IPCC Fourth Assessment Report, more recent assessments, pathways & opportunities for mitigation in the S.E. Asian region	Mario Herrero (ILRI)
9:20-9:40am	Enteric fermentation – overview of specific mitigation techniques (feed, management, dietary additives, animal genetics, vaccines, other)	Roger Hegarty (Australia) Tim McAlister (Canada)
9:40-10:00am	Nitrous oxide from agricultural soils (fertiliser, and pasture, range and paddock manure) – overview of specific mitigation techniques (as appropriate: feed, DCD, fertiliser management, drainage, management, dietary additives, other)	Tim Clough (NZ)
10:00-10:20am	Manure management options and opportunities – overview of specific mitigation techniques (as appropriate: different types of digesters, manure storage and application, interaction with cropping systems)	Julio Mosquera (Netherlands) La Van Kinh (Vietnam)
<b>10:20-10:40am</b>	<b>Refreshment break</b>	
10:40-11:00	Soil carbon sequestration Overview of specific mitigation options and opportunities	Brian Wilson (University of New England, Australia)
11:00-12:00noon	Individual country mitigation research experiences, opportunities and capacity. Four 15 min presentations with discussion	One speaker per country
12:00-12.30pm	Case study from Latin America – FONTAGRO project experience; presentation and discussion of lessons learnt and relevance for South-East Asian context	Hayden Montgomery and Harry Clark (on behalf of Veronica Ciganda, Uruguay)
12:30-1:30pm	<b>Lunch break</b>	

<b>Session 6</b>	<b>Future focus</b> - capacity building opportunities, needs, actions, resources	
1.30-1.45pm	Fellowships/Awards: LEARN, Borlaug, CCAFS, other LEARN network to facilitate researcher-to-researcher contacts and collaborations	Victoria Hatton (NZAGRC, New Zealand)
1:45pm	Facilitated roundtable discussion on: <ul style="list-style-type: none"> <li>• Identification of research gaps and priorities</li> <li>• Project ideas, capability building needs</li> <li>• Potential funding sources</li> <li>• Next steps – key actions and responsibilities</li> <li>• Role of the Livestock Research Group</li> </ul>	Facilitated by Harry Clark and Andy Reisinger (NZ), building on a survey of research opportunities and critical capacity issues in the region, completed prior to workshop
<b>3.15-3:45pm</b>	<b>Refreshment break</b>	
3:45-5.15pm	Bringing it together and next steps	Facilitated by Harry Clark and Andy Reisinger (NZ)
<b>5.15-5.30pm</b>	<b>Closing remarks and workshop close</b>	
		<i>Vanida Khumnirdetch (Government of Thailand)</i>