



South East Asia and the Pacific Focus Group Report

Yulye Jessica Romo Ramos, SciDev.Net

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## Summary

### I. Context

The South East Asia and Pacific (SEAP) focus groups were part of a regional research project funded by AusAID (the Australian Government Overseas Aid Program) designed and facilitated by SciDev.Net's Monitoring and Evaluation (M&E) desk. They took place at:

- Ascott Makati Hotel - Manila, Philippines on the 1 June 2012
- Novotel Lami Bay – Suva, Fiji on the 5 June 2012
- The Renaissance Hotel - Kuala Lumpur, Malaysia on the 8 June 2012
- Siam City Hotel - Bangkok, Thailand on the 11th June 2012.

Participants included science communicators, policy makers, scientists, academics, NGO officials as well as professionals coming from the private sector. The goal was to hear their views on Science and Technology (S&T) for development – seeking opinions on regional priorities, our current service, user needs and other issues specific to the region. We also studied regional capacity building needs as well as SciDev.Net's topic coverage and our users' online experience. Section 1 of this report explains how the meetings were organised.

Discussions ranged comprehensively from creating the right environment for science and innovation to how to disseminate information and facilitate the use of evidence and research results for development and poverty reduction (section 2). As well as discussing general insights on S&T for development, participants divided into specialist groups to generate more in-depth thoughts on emerging trends within their own areas (section 3).

An editorial article was created based on this report: "[Global priorities, local context: a governance challenge](#)" (19<sup>th</sup> Sep, 2012), by Nick Perkins.

### II. Who should use this paper?

This paper should be useful to any governmental and non-governmental organisations interested in or involved with development, science, or science for development in the SEAP region. It is also relevant to the media and private organisations, as their roles figured heavily in discussions. The conversations naturally developed into wide development and governance topics, demonstrating the strong interconnectedness between science and development.

Readers will find plenty of recommendations for action throughout.

### III. Perceived value of focus group discussions

Most participants rated their overall experience at the event as very good<sup>1</sup>. They valued interaction with other participants most highly. The opportunity to interact with SciDev.Net staff was ranked as high value, tending towards very high, and the topics discussed during the event were also rated high value.

The focus groups boosted the value of registering with SciDev.Net because we favoured registrants for the application and selection process (section 1). Suggestions on how to maintain or increase the value of registering focused, not surprisingly, on the possibility of attending more of these types of events as well as any other capacity building activities by SciDev.Net or other sponsors.

### IV. Key findings

- Participants clearly wanted to see participatory, multi-sectorial and multi-stakeholder approaches in use across all S&T and development topics – from national policies to community management of resources. The events also highlighted the interconnectedness between science, development and governance.
- Participants felt it was important to agree on a definition for development (at a national level) in order to provide clarity on the proper role for science, technology and innovation within development and poverty reduction work. The main criticism of ‘development’ was the overwhelming emphasis on economic areas. There was a clear desire to take into account social and environmental issues throughout the region. Participants from the Pacific contrasted the regional desire to balance development with cultural identity and conservation with the global emphasis on economic growth.
- The discussions identified political, religious and cultural contexts as important in facilitating S&T uptake. In Asia and the Pacific freedom of expression and personal safety in the discharge of duties varies significantly and should be tackled on a country-by-country basis. Educational policies and projects were cited as tools for this. Participants also felt that the region needed to focus or continue efforts to encourage environmentally friendly as well as socially- and gender-minded science, technology and innovation.

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<sup>1</sup> Based on a survey distributed at the end of each focus group event.

- Infrastructure and market-related issues were raised as well, touching on knowledge management, monitoring and evaluation as well as brain drain (a common issue in the region). The private sector's role was seen as key in this area, especially when it came to allowing for more flexible conditions for working women with families. International and regional cooperation was also discussed favourably with its respective caveats (consult section 2).
- Discussions made clear the close link between dissemination of research results and the uptake of research. Both rely heavily on facilitation and effective communication, between and across sectors and stakeholder groups. Knowledge brokers have a prominent role that is worth careful consideration. They serve policy makers, the scientific sector and the wider public; making them key to disseminating research and driving its uptake for development and poverty reduction. For example, most policy makers get information from both traditional and electronic media outlets, which emphasises the importance of online as well as traditional media in providing quality S&T news and analysis. Discussions also revealed that policy stakeholders rely heavily on government-related sources of information. That makes it important to ensure that S&T is not politicised, driven by political agendas or party interests.
- ICT (information and communication technologies) use is widespread throughout the region, but population pockets remain that have not benefited from recent advances – most predominantly in the Pacific. Addressing this shortfall could substantially increase S&T dissemination and uptake, as well as assisting equality and human rights issues.
- There is much room for capacity building and cooperation throughout the region at all levels. We asked focus group participants about their preferred training methods and delivery formats. Most preferred was 'in person', followed by 'online podcasts'. Over a quarter of respondents said they would be personally willing to pay for such training (28.57 per cent). Over half said they would pay if such training was also subsidised by a third party (57.14 per cent).
- Overall, regional priorities for policy, research and for journalism seemed to converge on common issues, particularly environmental and health-related topics, and also energy and food security. The implication is that the diverse focus group participants shared common priorities and goals. Perhaps boosting the uptake of S&T is mainly matter of cooperation, capacity building and of funding. However, the lack of participatory approaches, transparency and accountability at all levels also needs addressing.

## 1. Methodology

### 1.1 Areas of analysis

The Australian Government Overseas Aid Program (AusAid) is one of SciDev.Net's main donors. As part of a grant running from the 2 June 2011 to the 20 July 2012 we committed to organising meetings and focus groups in at least four regional countries in South East Asia and the Pacific (SEAP) with science communicators, policy makers and scientists. The meetings were to seek opinions on the regional context for S&T dissemination, and needs for, and obstacles to uptake (SciDev.Net Application 11.4.11).

We also used the opportunity to find out more about SciDev.Net's services and products - though largely outside the remit of this report. This information will be used within SciDev.Net.

The M&E Coordinator used a participatory approach for research agenda building. The following people helped by suggesting areas for in-depth analysis:

- Tracy Irvine: Former Head of Business Development at SciDev.Net.
- Nick Perkins: New Director (March 2012).
- Joel Adriano: SEAP regional coordinator, also present in 2 focus groups (the Philippines and Fiji).
- Editorial and News department: David Dickson (Editor), Corinne Podger (former News Editor), Anita Makri (Commissioning Editor), Mico Tatalovic (Deputy News Editor) and Naomi Antony (Assistant News Editor).
- Production department: Andrew Lee (web production manager).
- Marketing department: Clair Grant-Salmon (Marketing Manager).

Their input generated a wealth of potential roles for the meetings, and the following were identified as priorities:

1. Identify the science and technology (S&T) topics most relevant for development purposes
2. Analyse regional gender-relevant topics in S&T for development
3. Identify emerging areas of research
4. Identify emerging science communication trends
5. Identify emerging science policy trends
6. Study the appropriateness of formats used for coverage according to the different audience needs
7. Compare the perceived value of regional, global or specific topic coverage

8. Analyse preferred formats and technology platforms for consuming S&T information
9. Study capacity building and science communication training for all groups
10. Analyse the most effective methods for training.

The M&E Coordinator then designed the focus groups programme, using different methodologies and group dynamics to maximise participation as well as in-depth analysis and discussion (see Annex 1 for detailed information). The M&E Coordinator facilitated the focus group discussions, with the help of assistants in each country who helped coordinate the logistics and administrative tasks.

## 1.2 Selection of Countries within SEAP

The countries were selected based on a number of criteria and in consultation with our Regional Coordinator (Joel Adriano) as well as SciDev.Net senior management. The below summarises the strongest points for each location:

- *Thailand*: top investor in science and technology-related areas in the region.
- *Malaysia*: second top investor in the region.
- *Philippines*: our biggest readership audience in the region and home to our regional office.
- *Fiji*: participants from the Pacific islands could easily attend the event at Fiji. The event also coincided with a SciDev.Net capacity building workshop in Fiji (in partnership with the University of the South Pacific) and that increased value for money for participants' transportation costs.

### 1.3 Selection of Participants

All SciDev.Net registrants living in the four countries were emailed invitations to apply to attend the event. This approach was adopted to reduce the administrative time needed to process applications as well as the net costs of subsidising travel and accommodation to the events (where required).

Once applications were received there was a deliberate choice to:

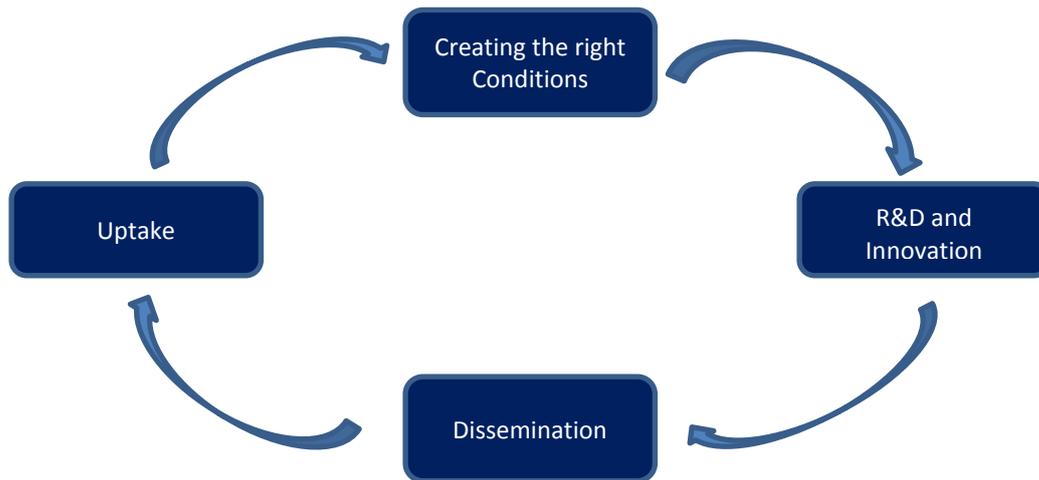
- Create participant groups for each country that represented all the sectors (government, academic, research, media, civil and private sector)
- Represent a wide range of organisations, but allow only one representative per institution
- Favour senior roles as a way to tap into more knowledge and experience (but without compromising the above two principles).

An expected secondary result was to facilitate networking opportunities within the country and across sectors and organisations, increasing the potential for partnerships in the area of S&T for development. See Annex 2 for a complete list of participants.

## 2. Science and technology for development

There were common topics of interest across the region with differentiated priorities. Figure 1 merges and categorises insights using a ‘cycle’ design:

Figure 1: Science & Technology cycle



The model is perhaps best described in reverse order. We start by defining ‘uptake’ as making use of evidence and research results. In that sense, uptake could be seen as an outcome type of stage. Uptake is thought to be dependent on dissemination, but most importantly on stakeholders’ capability to make sure evidence is used in a sensible and useful way.

‘Dissemination’ encompasses all efforts aimed at communicating research results, including but going beyond publishing evidence in academic journals. For example it refers to mass communication but also to specific efforts aimed at facilitating dissemination such as focus groups, events analysing insights from emerging research, specialist policy group discussions, etc.

‘Research and Development (R&D)’ as well as ‘Innovation’ are the formal act of conducting research, innovating and developing new solutions, processes or data. This could be either applied or fundamental research / innovation.

Finally, ‘setting the right conditions’ involves socio-economic, political and religious dimensions that create an environment that facilitates all of the aforementioned stages of the S&T cycle. For example: policies that offer funding and facilitate R&D as well as help create a science culture; or a governance or religious context that allows freedom of expression and access to information that in turn enables dissemination and uptake. This report summarise all the brainstorm discussions held in the four different countries - following the above S&T cycle.

## 2.1 Creating the right conditions

Participants felt that effective usage of Science & Technology (S&T) for development needed the following conditions:

- 1. A participatory, multi-sectorial and multi-stakeholder approach to all subjects related to S&T and development – from national policies to community management of resources.**

  - 1.1. Participation was also mentioned in relation to ownership and empowerment, and as a tool for increasing the sustainability of programmes and projects over the long-term.
  - 1.2. NGOs and media play a key role in identifying needs on the ground for the research and policy community to consider, and also by helping with monitoring and evaluation (watchdogs).
  
- 2. Agreement on what ‘Development’ should mean in order to develop policies as well as practical and technical projects within a well-defined framework.**

  - 2.1. Participants felt that defining what development means, at a national level, would help clarify the best role for science and innovation for development and poverty reduction purposes.
  - 2.2. Participants also felt development should not be politicized, i.e., whereby priorities are shifted according to political agendas and not so much on national needs
  - 2.3. The main criticism of ‘development’ was its overwhelming emphasis on economic areas such as economic growth. There was a clear desire to take into account social and environmental issues throughout the region.
    - 2.3.1. The main difference between the Pacific and the global scene was a strong desire to balance development with cultural identity and conservation.
  - 2.4. Unbalanced urban versus rural development needs tackling, resolving disparities in infrastructure and technological advancements (that are generally concentrated in urban centres).

**3. A political, religious and cultural context that facilitates S&T practice:**

- 3.1. Freedom of expression is crucial. In many cases researchers and the wider media do not always feel safe (professionally at least) talking freely about research results or sensitive matters related to S&T. This in turn obstructs communication at a larger scale as well as understanding of research, so limiting uptake.
- 3.2. Linked to the above point is personal safety in the discharge of duties, which is not a given in the region, contributing to brain drain and issues at the national level.
- 3.3. In some cases religious settings discourage research in certain areas, limiting or penalising independent scientific research. The interference is highest in countries with religious governments in place (such as Malaysia).
- 3.4. The wider cultural and social context also heavily influences S&T, sometimes enforcing a male dominance in, and an exclusion of women from, this area.
- 3.5. Educational policies, programmes and projects were seen as key strategies to:
  - 3.5.1. Create inclusive and culturally sensitive programmes that would facilitate S&T practice and uptake.
  - 3.5.2. Raise the importance and profile of S&T for development:
    - 3.5.2.1. Raise awareness of the importance of science and evidence for development at all government levels, so it is reflected in policies and allocation of resources.
    - 3.5.2.2. Encourage parents to help children take more science related courses.
    - 3.5.2.3. Motivate students to enrol in science related degrees / careers. Developing resources and making learning materials easy to understand was seen as key.
    - 3.5.2.4. Encourage academic and vocational institutions to be more involved in career orientation programmes.
    - 3.5.2.5. Increase the interest and involvement of the wider public in these topics.

#### 4. Comprehensive national S&T policies:

- 4.1. Comprehensive policies result in a research agenda based on national needs, one that provides direction and prioritises resource use, increasing overall effectiveness. Multi-stakeholder participation was seen as key to ensuring broad representation of interests and priorities, as well as inclusion of social and environmental concerns beyond the dominating economic rationale.
- 4.2. Participants wanted such policies to also build and strengthen the link between the science community and government.
- 4.3. Good policy helps to develop and maintain S&T and innovation systems.
- 4.4. Participants identified governmental management and resource disbursement as an area that needs capacity building.
  - 4.4.1. They raised the issue of reliable funding for S&T-related research.
    - 4.4.1.1. Political change that shifts budgets was identified as problematic.
    - 4.4.1.2. Participants were, for the most part, happy about benefiting from external funding, for example from international organisations. However, they raised caveats, discussed in point 4.6 below.
- 4.5. Participants identified loopholes in the legislator system, suggesting that appropriate regulatory and enforcement frameworks should also be developed in order facilitate good governance.
- 4.6. Clear national policies were seen as useful when dealing with international pressures and funding / investment opportunities.
  - 4.6.1. Participants felt that responding to international pressures and funding agendas needs more care, to prioritise national needs over international trends. International trends affect national projects, forcing grant seekers to reframe language, and in some cases areas of research, in order to continue receiving financial or technical support.

## 5. Good infrastructure and markets that:

- 5.1. Cater for multi-stakeholder educational needs in areas related to S&T for development
- 5.2. Facilitate research (development, testing, etc)
- 5.3. Help with knowledge management and uptake
- 5.4. Support monitoring and evaluation of research, and the application of results, as well as wider governance issues (i.e. progress on development goals and areas of national concern). Good infrastructure should also help avoid duplication and increase sustainability of programmes and projects.
- 5.5. Provide a 'space' to integrate science graduates and science communicators into the workforce, tackling the brain drain and shifting career choices that result from poor job opportunities and inadequate support.
  - 5.5.1. Better pay abroad was cited as a common cause of brain drain. It is clearly important to build the right conditions at home for competitive graduates and experienced professionals .
  - 5.5.2. The private sector's role is key, especially when it comes to allowing flexible working conditions for working women who are also mothers.
- 5.6. Support policies and markets that encourage innovation by small and medium sized enterprises (SMEs).

## 6. International and Regional cooperation

- 6.1. Focus groups saw cooperation as useful, especially when it related to developing national S&T policies, for example learning from other countries.
- 6.2. Participants wanted cooperation to also focus on strengthening national and regional policies on S&T. Here, regional cooperation may be more appropriate, for example to solve shared regional issues
- 6.3. Participants welcomed international involvement, for the most part, either as technical cooperation or donor's funding. However, there was a clear desire to use national talents or even provide capacity building so as to move away from the dominant model of hiring external consultants.
  - 6.3.1. Participants felt that ethical issues relating to transparency and information sharing need to be carefully managed. For example, in Fiji participants have noticed that some projects funded by international organisations do not always make sure findings are shared with locals (ie an extractive approach is followed).
- 6.4. Participants saw cooperation at national, regional and indeed global levels as the key to harmonising educational programmes, addressing the educational gap and promoting continued equal learning and job opportunities.

Building the right conditions for S&T-driven development will mean ensuring there are enough citizens contributing and engaged in science — from parents and researchers to governments and the private sector. In many countries the lack of human resources, i.e. low numbers of researchers, science-related teachers and graduates, is a concern.

## 2.2 Research & Development (R&D), Innovation

Participants felt that discussions on the role of S&T for development would help prioritise research that meets national and development needs. For example, in Thailand industrial development focuses on labour intensive activities (i.e the rubber industry) whereas participants wanted R&D and innovation that actively looks to add value.

The S&T topics most relevant for development in the region, according to focus group participants, are presented below (in no particular order). It is important to notice that all of them emphasise a participatory approach (community-based projects for conservation, resource management, research, etc):

### S&T for Development topics

1. Address the perceived lack of fundamental and/or applied research in some countries
  - 1.1. Highlight participatory research methods
  
2. Environmentally friendly technology and innovation
  - 2.1. To develop green products and green infrastructure. For use in mega and eco-tourism projects for example.
  
3. Socially and gender-minded science and innovation
  - 3.1. Considering the social and gender impacts of research is best practice, but is not always done. For example one participant highlighted certain agricultural products that affect women's reproductive systems. This is a clear example of research outputs that fail to take account of the gender and wider social contexts – reducing their own usefulness and in some cases causing new problems.
  - 3.2. Governments, the media and NGOs should play a crucial role in provoking research into incorporating more social and environmental concerns into their goals.
  - 3.3. Accountability and transparency from governments, the media and NGOs needs to be ensured, especially if all stakeholders are to be represented fairly

#### 4. Health

- 4.1. Topical and non-communicable diseases
- 4.2. Nutrition-related subjects such as balanced food intake
- 4.3. Health programmes should be inclusive and culturally sensitive

#### 5. Climate Change

- 5.1. Regional differences were clear, for example in the Pacific climate change concern is mostly around marine subjects such as sea levels and increased salinity, whereas in South East Asia carbon reduction is the focus.
- 5.2. Participatory methods are needed for climate change adaptation

#### 6. Energy

- 6.1. Research to manage carbon footprints
- 6.2. Managing energy development versus food security in coastal areas. This relates for example to offshore wind power projects and their impact on the surrounding environment and wildlife.

#### 7. Water-related subjects

- 7.1. Fisheries
  - 7.1.1. Tuna tagging and sea mining needs research in Fiji
- 7.2. Coastal resource management
- 7.3. Watershed management that addresses both fresh water needs and disaster prevention
  - 7.3.1. Cleaning water supplies
  - 7.3.2. Changing rain patterns that lead to reduced supply
- 7.4. Aqua fisheries
- 7.5. Aquasilviculture
  - 7.5.1. Rehabilitating and making use of mangroves
- 7.6. Hydroelectric dams
- 7.7. Issues arising from increased salinity

## 8. Conservation

- 8.1. Controlling invasive species – especially in the Pacific
- 8.2. Community-based projects for resource management and conservation

## 9. Agriculture

- 9.1. Food security. Addressing land-use changes and climate change impacts
- 9.2. Genetic diversity
- 9.3. Crop insurance and disaster management such as chemical leakages
- 9.4. Educational policies are needed (Malaysia)
- 9.5. Issues arising from genetically modified crops
- 9.6. In relation to climate change
- 9.7. Agro-biodiversity
- 9.8. Pest management

## 10. Forestry-related

- 10.1. Agroforestry
  - 10.1.1. Help with biodiversity and water management strategies
- 10.2. Tackling deforestation

## 11. Risk and disaster-related subjects

- 11.1. Reviewing how much 'development' projects contribute to risk and vulnerability (for example housing projects in high risk areas)
- 11.2. Participatory risk prevention and disaster management, supported by gender-sensitive programmes
- 11.3. Disaster management
  - 11.3.1. How governments can prevent disasters by in discouraging human activities that add to risk
  - 11.3.2. The role of media organisation in raising awareness and disseminating information on risk and disaster management

## 12. Pollution

- 12.1. Marine, freshwater, land and noise pollution
- 12.2. Zoning
- 12.3. Waste management

## 13. Knowledge management, i.e. the issue of who owns science

- 13.1. Participants felt indigenous or traditional knowledge should be incorporated into formal science, and acknowledged accordingly
- 13.2. Intellectual Property Rights (IPRs) are related to the above point but are also linked to balancing profit making against wider development.

## 14. Ecotourism

- 14.1. Climate change concerns and wider development goals should be integrated into ecotourism plans and policies.
- 14.2. Ecotourism can preserve and showcase local / traditional systems.
- 14.3. Ecotourism must be credible. Development must be wary of projects branded as ecotourism that are in fact not socially or environmentally fit.

## 2.3 Dissemination and uptake of research results

This section studies the last two stages of the S&T cycle, dissemination and uptake (Figure 1), in parallel. Both rely heavily on facilitation and effective communication, between and across sectors and stakeholder groups. For uptake, it is also important to consider peoples' differing capacity levels for making use of evidence. See *Section 1 Setting the Right Conditions* for discussion on enhancing public capacity for uptake through educational policies and building a science culture. Section 3 covers specific professional and personal capacity building needs for policy makers, scientists and science communicators.

The focus groups produced the following general insights for dissemination and uptake:

### 1. The role of the academic and research community

- 1.1. Better documentation is needed. Many participants felt documentation is scarce compared to research outputs. Encouraging publication in research journals was suggested as part of the solution.
- 1.2. The community should engage in dissemination and facilitating uptake for policy development
  - 1.2.1. Policy makers and other stakeholders need expert opinions from scientists which will aid policy and development planning. However scientists do not always possess the necessary political understanding to engage effectively.
  - 1.2.2. Participants felt scientists needed much capacity building when it came to knowing how to communicate to non-specialist groups, especially the media. Efforts in this area will help increase dissemination.
  - 1.2.3. Participants saw personal and professional risks arising from public declarations, as well as lost credibility due to political involvement, as major constraints preventing scientists from engaging in policy development or mass communication. However, they also pointed out that scientists often have a poor understanding of the importance of communicating results outside the academic community (i.e. beyond publishing in journals).

## 2. The role of NGOs

- 2.1. NGOs can disseminate research results, facilitating uptake by those who most needed them.
- 2.2. NGOs can help evaluate how S&T outcomes will affect different groups from an economic, social and environmental point of view.

## 3. The role of media

- 3.1. Both traditional and alternative media should advocate S&T for development.
  - 3.1.1. Inspiring stories, such as successful cases of technology transfer, are effective.
  - 3.1.2. Many participants reported public interest in S&T issues, while recognising that communication must be relevant to generate maximum interest and action.
- 3.2. The media can help set the public policy agenda. However, participants also emphasised neutrality and objectivity to avoid the risk of media politicisation.
  - 3.2.1. Participants saw media organisations as mostly working on short-time frames. This can hinder long-term coverage of issues, falsely suggesting they lack public relevance, and resulting in dropped plans for using S&T to address development issues.
  - 3.2.2. Responsible behaviour paired with transparency and accountability is key where media help set public policy agenda.
- 3.3. The media is a key channel for communicating and disseminating academic and research evidence, helping promote public interest and discussion, and facilitating uptake.
  - 3.3.1. Time constraints, high output expectations and the media organisation's agenda can be obstacles preventing journalists from covering more S&T-related topics. Poor understanding of S&T subjects remains a challenge, resulting in low numbers of science communicators.
  - 3.3.2. Participants wanted media organisations to build capacity by investing in professional development for their journalists. But this rarely happens, especially when it comes to S&T subjects. The focus groups would like to see more full-time writers covering S&T topics.
  - 3.3.3. Some participants highlighted poor science reporting.
    - 3.3.3.1. Scientists often feel journalists do not always report the whole story, that they oversimplify issues, lack inquisitive thinking (investigative reporting) or present incorrect information – all of which could be tackled with training.
    - 3.3.3.2. Reports lack a broad representation of views.
    - 3.3.3.3. Journalists focus on controversial points of view instead of generating discussion on truly important issues that need public engagement.

## 2.4 The gender perspective

In most countries, participants had a shared perception of the gender issues involving women: fewer women than men work, they earn less, and achieve less in education than men. They are also restricted by their sexual, reproductive and care-giving roles in society, etc.

Participants in the Philippine focus group saw a different picture. They reported more women working than men, and pointed to the two female presidents in the past 10 years as a success for gender issues. Participants believed that men lack the same education opportunities as women because men start working earlier. This seems to increase male educational dropout rates and perpetuates general low education levels. Participants reported that, except for executive posts, most women also earn more than men. However, as discussions continued it was clear that women in the Philippines are still constrained by the usual cultural, societal and sexual/reproductive roles. They remain the primary care-takers for children and are also the most affected by disaster, environmental and economic issues.

Science and technology for development brings specific gender challenges throughout the region. Low numbers of women go into science-related studies / careers, and participants from Malaysia linked this to the cultural, religious and reproductive social setting. This context sees women as family-oriented care givers, discouraging professional development. This is particularly so in the case of male-dominated science and technology. Whilst female participants acknowledged that some women are not necessarily forced to be full-time mothers /wives, they said it can be difficult to openly discuss professional and academic inclinations with their husbands, and that this impedes women's development.

Men, and indeed the private sector, were seen as reluctant to make changes that would allow women to participate more in S&T, such as allowing more flexible working hours or sharing family responsibilities. But participants also recognised that some women continue to discourage other women by favouring the ideas underpinning the cultural setting described above. Governments could do more, developing more gender sensitive programmes across all sectors, and avoiding policies that continue to stereotype women. Participants again cited education as key, especially when combating the larger societal issues that create 'glass ceilings' for women. In Malaysia, the group suggested making physical science teaching more female friendly; whereas in the Philippines discussion gravitated towards making disaster management and awareness programmes gender sensitive.

Transgender was also discussed. Science and technology's role in facilitating sex changes and wider cultural and social transformation was especially interesting. This angle has perhaps not been studied in depth so far, because it touches on ethical and taboo subjects. Another S&T advance that suffers from taboos is safe abortion techniques. In terms of health, participants felt there was still much S&T uptake to do to reduce maternal mortality.

### 3. Regional trending: Emerging regional trends and priorities

Participants were divided into specialist groups and asked to generate in-depth thoughts on emerging trends within their specialism. Their insights, gathered from flip charts, are presented in tables below. In some cases they have been grouped and presented in a different order to allow for better analysis. Some table cells give more detail than others, some are empty. This reflects the amount of detailed participants provided (empty cells show that the specific group did not mention that particular topic).

The emerging ‘hot’ topics in policy, research and science communication related to environmental issues, energy, health and food security. Malaysia led in this discussion on Innovation, whereas neither the Pacific nations nor Thailand saw it as a pressing concern.

ICT (information and communication technologies) are used widely throughout the region, although there are still population pockets that have not been able to benefit from recent advances – most predominantly in the Pacific.

Knowledge brokers have a prominent role that is worth careful consideration. They are the key to disseminating research and driving its uptake for development and poverty reduction. They serve policy makers, the scientific sector and the wider public. For example, most policy makers get information from both traditional and electronic media outlets, which emphasises the importance of online as well as traditional media in providing quality S&T news and analysis. Discussions also revealed that policy stakeholders rely heavily on government-related sources of information. That makes it important to ensure that S&T is not politicised (i.e. not based on political agendas but development needs).

There is much room for capacity building and cooperation throughout the region and at all levels. Section 2 covered the wider issues of cooperation and capacity building, so this section focuses on professional and personal development needs.

### 3.1 Emerging policy trends in the region

#### 3.1.1 Popular policy topics

The important policy topics identified in the region are the environment, economy, food security and education. Innovation does not come up as a strong topic or indeed an area of excellence in the Pacific or Thailand.

Policy participants attending the Malaysian event felt the overarching policy vision should be based on the well-being of citizens, wealth creation, and green, clean and resilient principles.

**Table 1: SEAP popular policy topics \***

Philippines	Malaysia	Pacific	Thailand
	Human capital development and social justice [Accountability]		Quality of life
Disaster management	Integration of sustainability (balanced development) values in policy making	Environment, climate change and conservation (i.e. REDD+)	S&T for environment as well as adaptation and mitigation (i.e. for climate change and disaster management)
Copyright, trademark economic-driven R&D	Intellectual Property Rights (IPRs) and Commercialisation	Intellectual Property Rights (IPRs) and trade	S+T for a digital and low carbon economy
Agriculture	Food production/security harnessing R&D for agriculture development	Food security	Food security
Job skill matching	Develop the culture of science	Education reform	Education - food education
Innovations (ICT, biotechnology)	Innovative technology in: biotechnology, oil, gas and renewable energy - increasing investment in R&D to 2per cent of GDP	Mining/oil/gas	Energy security
		Water resources, marine resource policies and fisheries	Water security/safety
		Waste management and pollution	
Lifestyle disease/ commercial-driven diet, alternative medicine (traditional knowledge)		Health	
	Gender dimensions		

\* Text highlighted in yellow indicates that these subjects were also identified as important by the scientific or science communication groups.

### 3.1.2 Popular formats and technology channels for S&T information for policy

Participants were asked to identify the most popular formats and technology channels for receiving, and also disseminating, information for policy purposes (see below table). Most policy makers consume information via both traditional and electronic media outlets, and this emphasises the importance of media in providing quality S&T news and analysis.

Policy stakeholders seem to also rely heavily on government-related sources of information, which reminds us of the need to ensure that S&T is not politicised (i.e. not based on political agendas but development needs).

**Table 2: Popular formats and technology channels for S&T information for policy**

Philippines	Malaysia	Pacific	Thailand
National Government	Science advisor to Government	Public campaigns (support) petitions	Public relations
Institute of Statistics (NSO)	International documents	Reputable published documents	
Media coverage and social media as well as SMS (texting)	Media (including electronic)	Media-internet, TV, radio, newspapers and social media	Mass media, Internet and other research
	Seminars , conferences, virtual public debate / networks, expert and focus groups (think tanks, academia, NGOs) following democratic principles. There is a desire to have more opinion surveys.	Consultations with community stakeholders / NGOs and focus group discussions. Public awareness <ul style="list-style-type: none"> <li>○ Dramas</li> <li>○ Posters</li> <li>○ Advertisements</li> <li>○ Billboards</li> </ul>	Appropriate media for target audience

### 3.1.3 Capacity building

Most participants felt that international and in general cross-border collaboration was needed. The most popular topics for collaboration were education and research. Participants also wanted to share information and stakeholder involvement at all levels. Other concerns include:

- How to use more multi-sectorial and multi-stakeholder participatory approaches for governance.
- Capacity to develop national S&T policy, along with its budget, regulatory and monitoring framework.
- Governments need the capacity to disburse funds.
- Capacity development in knowledge management and information sharing, focusing on ‘socialising’ science.
- Capacity to develop an appropriate S&T educational programme that is also culturally sensitive.

This author also believes that there is much room to improve skills for finding, appraising and using evidence for policy making. This was evident in the results of the SciDev.Net global evaluation survey<sup>2</sup>.

### 3.1.4 Differences between the regional and global context

The Pacific participants were perhaps the most eloquent at identifying contrasting trends in policy between the regional and global context. The below table is mainly based on their reflections:

**Table 3: Policy differences between the regional and global context**

Global	Regional
Regard for technical/scientific knowledge	Regard for traditional knowledge
Focus on economic development	Focus on sustainable development
Fast pace	Slower pace compared to global
Concerned with carbon emission	Concerned with sea level rise
Usage of non-renewable energy	Low energy consumption
Strategies around preservation	Strategies around conservation but also sustainable use/management

<sup>2</sup> Authored by Yulye j Romo Ramos and due to be published on 26 October 2012 on SciDev.Net website.

## 3.2 Emerging scientific trends in the region

### 3.2.1 Emerging areas of S&T research for development

Table 4: Emerging regional scientific trends \*

Philippines	Malaysia	Pacific	Thailand
Sustainable development, climate change, environment and conservation	Sustainable agriculture 'go green'	Climate change, conservation and biodiversity; molecular biology, soil health improvement (physical/chemical/biological)	Climate change, disaster adaptation / reduction, green technology (regulation, import and export, production, quality control and safety standards)
Health issues and use of alternative medicine	Medicinal plants	Non-communicable diseases, plants for pharmaceuticals	
Food security	Food Security- rice productivity, aquaculture and fisheries	Food security, germplasm collection climate/pest/disease resilient or tolerant crops	Food security - balance between food and energy production
Indigenous S&T issues	Harnessing traditional knowledge of indigenous Peoples	Implementing new and/or enhancing traditional practices	
Gender diversity and inequality issues			
ICT and scientific innovation	Biotechnology and nanotechnology		
	Energy provision - bio energy and biowaste, biomass	Renewable energy and bio-security: biofuels (palm)	Balance between food and energy production
		Waste management, especially in rural areas (i.e non-biodegradable plastics, mining (deep sea mining tailing). Importance of feasibility studies	
		Water security	Water security
			Forecasting and monitoring systems and monitoring for: floods, early warning, etc.

\* Text highlighted in yellow indicates that these subjects were also highlighted by the policy or science communication specialists.

### 3.2.2 Popular formats and technology channels for S&T information identified by the scientific specialists

Participants were asked to identify the most popular formats and technology channels used for receiving and disseminating information (two-way flow) for policy purposes (see below table).

**Table 5: The scientific community’s preferred formats and technology channels for S&T information**

Philippines	Malaysia	Pacific	Thailand	
	Due to time constrains this topic was not covered in Malaysia	Education (formal and informal) also integrating scientific information with influential institutions (e.g. churches and cultural group)	School textbooks	
Scientific journals, databases		Proper documentation/ references/ database	Research reports	
<u>Online:</u> social media, news websites (SciDev.Net), digitized learning materials/ resources, game-based learning systems		<u>Online:</u> Social media ,websites, emails, mobile	Networking, billboards	<u>Traditional:</u> TV (news and documentaries) Radio.
		<u>Traditional media</u> (radio,, TV, print)		<u>Online</u> as well
Celebrity product endorsement		Participatory approaches, pilot projects (role model farmers), forums, demonstration sites, Role playing/dramas		

### 3.2.3 Capacity building needs

Participants felt capacity building should start at high school or earlier; provide incentives for outstanding tertiary education students; and building institutional capacity. Low understanding of English in some countries was seen as detrimental. It prevents scientists from tapping into the global repository of knowledge (predominantly in English), and equally makes it difficult for scientists to share their work with the wider community. This should be actively addressed at a country-level.

**Table 6: Scientists’ capacity building needs**

Philippines	Malaysia	Pacific	Thailand
Popular news writing		Publication skills e.g. journal articles. Books	
Media and Information Literacy (MIL) such as photojournalism	More training for emerging technologies		
How to talk about research findings to the public		Effective networking and communication skills	
	<i>Skills for applied research.</i> Via: Fostering partnerships between academic and private sector; networking, staff and student exchange or attracting campuses from developed country institutes		Training in: atmospheric and environmental forecasting, adaptation strategy, sustainable agriculture, environmental law/policy
	How to include more gender considerations, also using local knowledge		

Scientist put a heavy focus on the educational system and its interaction with other actors as a way of facilitating research.

### 3.2.4 Differences between the regional and global trends

Table 7: Differences between the regional and global scientific context, as identified at focus groups

	Global	Regional Context
<b>Philippines</b>	Differences were presented in a list: <ul style="list-style-type: none"> <li>• Digital divide (access to tools)</li> <li>• IPR policies, issues (copyright/ piracy)</li> <li>• National regulation policies on internet (e.g. China)</li> </ul> Internet security and privacy issues	
<b>Malaysia</b>	Water Issues	No water issues in Malaysia yet
	Solar and wind energy development	Lagging behind the solar and wind energy development
	Relatively open research management	Restrictive research management
<b>Pacific</b>	Services Economy	Economy based on natural resources but no heavy industry
	High-tech products	Low-technology usage
	Market controlled by global market force	Market controlled by producers
	Fast-driven pace	Relaxed pace
	Mono-culture knowledge	Integration of traditional knowledge in science
	Usage of commercial crops	Usage of traditionally known crop species
	Economic Development-driven	Environmentally focused development
<b>Thailand</b>	Focus on climate change	Focus on economy, Agriculture, Energy

### 3.3 Emerging science communication trends in the region

#### 3.3.1 Popular science communication topics

Discussions suggest that media in the SEAP region focus less on the educational side of science for development compared to participants from the policy and scientific sectors. Media specialists also seemed less concerned with topics related to gender, water and waste management than did policy and research specialists.

**Table 8: Popular science communication topics \***

Philippines	Malaysia	Pacific	Thailand
	Participatory governance and human capital development		Governance: lack of green/clean policy, areas related to incentives for investment and the private sector role
Disaster management	Sustainability and environmental issues: disaster management (floods, landslides), climate change, deforestation, REDD, depletion of aquatic resources, consumption vs conservation, biodiversity	Sustainable use of resources (fisheries and forests) and environment issues: mining and rehabilitation, climate change, conservation, extreme weather (flooding, cyclones), natural disasters (tsunami, volcanoes)	Environmental issues: pollution
	Land and indigenous rights, local knowledge	Intellectual Property Rights (IPRs)	
Food security		Agriculture and food security	Agriculture, biotechnology products (i.e. seaweed by NSTDA)
Renewable energy : solar, geothermal	Green technology and ICT, biotechnology	Energy and clean energy (biofuels)	Energy (solar, biofuels) green and alternative technologies
	Water variability		
Health : tropical diseases (dengue, malaria), nanotechnology, maternal and child mortality.	Medicinal plants	Nutrition and non-communicable disease	Health and life science
			Urban planning

\* Text highlighted in yellow indicates that these subjects were also identified as important by the scientific or policy specialists.

### 3.3.2 The science communication specialists’ preferred formats and technology channels for S&T information

Participants were asked for their most popular formats and technology channels for receiving and disseminating information (two-way flow) (see below table).

Table 9: Science communicators’ preferred formats and technology channels for S&T information

Philippines	Malaysia	Pacific	Thailand
<u>Online</u> : social media (youth), email, newsletter, internet	<u>Online</u> : blogs, social media, emails and websites	<u>Online</u> : facebook, blogs, email, mobile	<u>Online</u> : Internet
<u>Traditional</u> : TV, radio, print (scopus and journal aggregators)	<u>Traditional</u> : policy briefs	<u>Traditional</u> : TV, radio, print, billboards/posters	<u>Traditional</u> : TV (documentaries, docu-dramas, game shows), radio
	Face to face meetings, Training & workshops	Public (community) meetings/consultations, demonstration projects	

### 3.3.3 Capacity building needs

Participants felt that scientific and shared language literacy for all would really contribute towards efficient science communication, especially between countries. Some welcomed more public-civic-private partnerships as well. Others suggested regional networking for science communicators would be beneficial. Thai participants felt reporters in general lack knowledge or money to report appropriately.

**Table 10: Science communicators' capacity building needs**

Philippines	Malaysia	Pacific	Thailand
Science career and human resource development (more PhDs)		Increase science literacy (schools and universities)	Science education: universities are biased to communication for marketing/PR and health; less so on science communication.
Finding equipment, materials,	Sharing information/skills in face to face meetings [perhaps via ASEAN]	Basic skills needed as well as journalist training (investigative)	
	New technology use: effective targeting of audiences, writing, prioritization, case studies		

### 3.3.4 Differences between regional and global trends

Table 11: Differences between the regional and global context for S&T for development, as identified by scientists

	<b>Global</b>	<b>Regional Context</b>
<b>Philippines</b>	Focus on lifestyle	Focus on tropical diseases
	Global Cooperation	Lack of Asia-wide cooperation
	Climate Change	Different aspects of climate change (geo-hazards, disasters)
<b>Malaysia</b>	Participants used a list: <ul style="list-style-type: none"> <li>- Malaysia as source of the world’s interest.</li> <li>- Poor political will and implementation amongst regional Governments.</li> <li>- Information asymmetry: it is difficult to find / validate information.</li> <li>- Regional capacity to assess new technologies is limited (often influenced by politico religious issues).</li> <li>- Regional implementation of global standards can be lacking.</li> </ul>	
<b>Pacific</b>	Participants used a list: <ul style="list-style-type: none"> <li>- People are more ‘connected’ to the environment within the region compared to globally</li> <li>- Peoples’ ability to connect and share information is more variable within the region than the global norm</li> <li>- Climate change impacts real lives in this region.</li> </ul>	
<b>Thailand</b>	Focus on climate change adaptation and space technology	Focus on economic development

## Final remarks

The focus groups generated much information about the regional context of S&T for development. They were also useful for analysing SciDev.Net's performance. Running more focus groups throughout other regions where SciDev.Net has a presence would help us stay in touch with our audiences.

Other partners and organisations could also facilitate multi-sectoral events, which seem scarce in the region but highly needed. These types of events give participants a chance to hear the challenges faced by other actors and sectors, allowing them to see the bigger picture as well as understand where their organisations and roles could help.

This document has presented many areas where action and investment is needed, elaborating on the roles of the research community, the public sector (government), international organisations, the private sector, knowledge brokers and civil society — they all play key roles in helping ensure research findings are actually used for development and for poverty reduction. Most participants said they hope this document will result in more action, taking into account national priorities but also the wider regional context. This author recommends that SciDev.Net works with regional partners and international organisations to realise some of the calls for action found throughout this document.

A follow up review to this document would be highly beneficial as well, showing participants the progress made as a result of the time they invested. Such a paper should also capture new partnerships between participants or any other impact originating the focus groups.

### Annex 1 – Focus group methodology

Activity	Area of Analysis		Specifics	Needs	Areas of Consideration
1. Reception 8:30 – 9 am	N/A		Reception and drinks	Participants lists and catering service	
2. Brainstorm - all 9 – 10:30 am	Editorial and News Coverage		1.1 Most relevant S&T topics for development	Large sheets of paper or screen or white board	In order to encourage all to contribute and avoid intimidation per roles, standard brainstorm rules were clearly explained
			1.2 Gender-relevant topics for S&T and development		
			1.3 SciDev.Net’s regional and global competitors		
3. Break 10:30-10:45am	N/A			Mid-morning drinks and pastries	
4. Discussion in groups (divided by roles/sectors), presenting results to plenary 10:45am – 12:30pm	As above	Training needs	2.1 ‘Breaking’ areas of research relevant to development issues as well as capacity building needs	Group researchers to facilitate discussion. Flip charts and markers	Group dynamics, ensuring all participate equally within and across groups = world café format. Encourage all other groups to add to the information presented per group in order to make sure all relevant information has been considered.
			2.2 Science communication trends (topics, formats and technology tools usage) as well as capacity building needs	Group science communicators to facilitate discussion Flip charts and markers	
			2.3 Science and Innovation policy trends as well as capacity building needs	Group policy stakeholders to facilitate discussion Flip charts and markers	

Activity	Area of Analysis	Specifics	Needs	Areas of Consideration
5. Lunch 12:30 – 2pm	N/A		Catering	Networking
6. SciDev.Net case studies – presenting results to plenary 10:45 – 11:45pm	Service and Technology	Navigational and search tool capabilities	Division of participants into 3 groups (by topics of interest) each with access to laptops connected to Internet and ready to browse SciDev.Net website. Each group to choose 2 topics to evaluate across 2 different types of articles (news, opinions, policy briefs, etc)	Group dynamics, ensuring all participate equally within groups
	Editorial and news coverage	Timeliness of coverage		
		Pertinence and depth of coverage by topic		
5. Survey 11:45am– 12pm	Service and technology	Best and worst of SDN website and mobile site	Copies of surveys and pens to complete it	
		Weekly email alerts		
		Bespoke content delivery		
		Value of registrant's offer		
		Methodologies for training delivery		
		Practical guide usage		
6. Open session 12 – 12:30pm	Any		Encourage submission of any feedback that would help uptake of information	

## Annex 2 – Participant list

Please note that names in green are actual attendees, whereas those in white are professionals represented by someone else at the event.

### Philippines

Name	Occupation	
	Job Title	Organisation
Fatma M. Idris, D.R. Dev	Regional Director	Bureau of Fisheries and Aquatic Resources XI
Maria Leah Barona-Cruz	Senior Specialist-Web Content (also Writer/Editor)	International Rice Research Institute
Maria Finesa A. Cosico	Project and Extension Officer	Advocates of Science and Technology for the People
Armando M. Guidote Jr.	Associate Dean for Research and Creative Work Associate Professor. Loyola Schools, Department of Chemistry	Ateneo de Manila University
Marjorie Rose San Pedro	Information Coordinator (Education and Health)	Asian Development Bank

Name	Occupation	
	Job Title	Organisation
Teresita Superioridad Baluyos	Public Information Officer	Department of Science and Technology
Grace T. Bengwayan	University and Board Secretary	Benguet State University/Adviser - student publication
Tess Raposas	Freelance Journalist/Correspondent	GMA News Online Philippines, The Women's International Perspective (WIP)
Edmon Agron	Science Research Specialist	Philippine Council for Health Research and Development
Roberto C. Julian	Teaching Fellow	The Development Academy of the Philippines
Madeline B. Quiamco – represented by Therese Patricia San Diego	Dean of Graduate School	Asian Institute of Journalism and Communication (AIJC)
Therese Patricia San Diego	Writer, Editor and Research Associate	Asian Institute of Journalism and Communication (AIJC)
Ma. Antonia Odelia Maoi G. Arroyo – represented by Stephen Michael	CEO and President	Hybridigm Consulting
Stephen Michael CO	Biotech Consultant	Hybridigm Consulting

## The Pacific

Name	Occupation	
	Job Title	Organisation
Jacqueline Adam	Senior Quarantine Officer - Awareness	Quarantine, Ministry of Agriculture, Samoa
Tokintekai Bakineti	Principal Agricultural Research Officer	Government
Mateilili Tautalagia Lea'ana	Senior Information Officer	Ministry of Agriculture and Fisheries
Ms Timaima Racule	Plant Biology PhD Researcher	AusAID Leadership Scholarship Recipient for 2012
Emelyn Maiava-Papali	Policy and Regulatory Officer	Ministry of Natural Resources Environment
Mellie Samson Junior	Conservation Biologist	Papua New Guinea Institute of Biological Research
Luaiufi Dave Joseph Aiono	Agroforestry Technical Officer	Ministry of Natural Resources Environment
Anne Moorhead	Science writer and editor/ communications specialist	Freelancer
Vaeno Wayne Vigulu	PhD Researcher	ACIAR and Griffith University

## Malaysia

Name	Occupation	
	Job Title	Organisation
Robert Finlayson	Research Communications Specialist	World Agroforestry Centre (ICRAF) Southeast Asia Program
M.E. Reza	Committee Member, International Relations Committee	Malaysian Red Crescent Society
Prof. Dr. rer. Nat. Hesham Ali El Enhasy	Assistant Director (research and innovation)	Institute of Bio product Development
Dr Ravichandran Moorthy, Ph.D	President, Asia Pacific Forum on Ethics & Social Justice & Senior Lecturer	National University of Malaysia (UKM)
Dr. Fred Weirowski	Director	AQACON Pte Ltd & Blue Life ecoservices Lt.bG
Choo Poh Sze	Assistant Editor	Asian Fisheries Society
Latsoomanan Meshek	General Secretary	Consumer Association of Klang

Name	Occupation	
	Job Title	Organisation
Dr. Michael Hermann	Global Coordinator	Crops for the Future
Prof. Dr. Farida Habib Shah	Vice President , OWSD . Fellow , TWAS	Academy of Science for Development Countries
Jennifer Tan	Industry Analyst	Frost & Sullivan GIC Malaysia Sdn. Bhd

## Thailand

Name	Occupation	
	Job Title	Organisation
Richard Friend	Senior Staff Scientist	Institute for Social and Environmental Transition (ISET)
Ladda Woravitlikit	Managing Director	Siam Lamps Co., Ltd
Erin Nash	Climate Change Officer	Worldwide Fund for Nature-AusAID funded through Youth Ambassadors for Development Program
Terry Clayton	Managing Director	Red Plough International
Eddy A Gafer		
Kamol Sukin	Former senior reporter covering science and environment at the Nation, now freelancer	
Pennapa Hongthong	Former senior reporter covering science and environment at the Nation, now freelancer	
Amorn Pimanmas	Associate Professor of the Project Committee	Engineering Institute of Thailand (EIT) and Sirindhorn International Institute of Technology

Name	Occupation	
	Job Title	Organisation
Dr Thaweesak Koanantakool – represented by KGirana Thewa-Aksorn	President	National Science and Technology Development Agency
KGirana Thewa-Aksorn		National Science and Technology Development Agency
Dr Anond Snidvongs – represented by Preesan Rakwatin	Executive Director	Geo-Informatics and Space Technology Development Agency (GISTDA)
Preesan Rakwatin	Lead Researcher	GISTDA's Research and Development Group
Dr Chayanis Krittasudthacheewa – represented by Jacqueline Ernerot	Deputy Director	The Stockholm Environment Institute
Jacqueline Ernerot	Intern	The Stockholm Environment Institute
Peeraphan Korthong	Director	Agriculture and Cooperatives Ministry's Agricultural Information Division (MOAC)
Radda Larpnun	programme Officer	International Union for Conservation of Nature (IUCN)