



SEA-EU-NET Deliverable 2.2

Report on cooperation possibilities with aid organisations



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Introduction and Methodology

The objective of the SEA-EU-NET project has been to increase the quality, quantity, profile and impact of Science and Technology (S&T) cooperation between Europe and Southeast Asia. In addition to the traditional sources of funding for S&T cooperation (national research councils, European framework programmes), international development agencies have a shared interest in scientific capacity building, and in supporting technologies which address development priorities such as health, food security, energy security and disaster risk reduction.

This short report has been produced to provide an overview of science for development, to identify specific agencies and development challenges, and to discuss some of the challenges that may occur when using development funding for S&T development. This is intended as a brief preliminary introduction to the topic, in anticipation of greater engagement with development agencies in the SEA-EU-NET 2 project as a result of a greater focus on common societal challenges.

In order to prepare this report, a conference on Science for International Development was organised by the Department of Science and Technology (DOST) of the Philippines and the British High Commission Singapore, and took place on 18th September 2012 in Manila. The conference provided an opportunity for various aid and funding organisations to present the activities being conducted in Southeast Asia. The event also highlighted specific societal challenges in which development needs and scientific possibilities are aligned. This report draws on data collected during the planning, hosting and follow up to this conference.

Why Science for Development?

International development funding is based on the recognition of the interconnectivity of nations, and the ways in which threats facing one part of the world can have a global resonance. Undersecretary Fortunato T. de la Pena of DOST highlighted this, speaking about the interconnectivity of nations and thus, the need to help each other address major global challenges.

Health provides some of the most vivid examples of interconnectness. According to Ms. Sarah Barton, Director of Operations of the Centre for Tropical Medicine at the Oxford University Clinical Research Unit in Vietnam, Asia has been identified as a global hotspot for the emergence and re-emergence of infectious diseases that threaten the world. Thus, the region needs to work with the best individuals and best institutions both nationally and internationally in order to develop treatments and preventative strategies.

The importance of sustainable development – as opposed to development at all costs – also presents a need to incorporate S&T developments. The Asian Development Bank's Lauren Sorkin emphasized that meeting the demands of today's population without comprising the needs of future generations is the challenge of sustainable

development. Meeting food, water and energy security challenges requires inclusive development, as well as knowledge and technology that can be applied to achieve more inclusive, sustainable growth in the Asia-Pacific region.

International development investment in S&T capacity is in part driven by a desire to enable recipient countries to become more resilient to global challenges, and to develop local solutions to specific local conditions. More broadly, S&T capacity is increasing seen as being an important factor in development, particularly in ensuring that the private sector is able to innovate in order to improve productivity and develop new products and services.

The Science for Development Landscape

Organisations which invest in development include a diverse selection of national and multinational development agencies, international financial institutions, and S&T agencies. Taking the global challenge of health as one example, the organisation Policy Cures tracks funding of innovation for ‘neglected’ diseases (defined to include TB, HIV/Aids, malaria, dengue, etc.)¹. The list of the twelve funders contributing most investment in the 2007-2011 period in table 1 shows that development agencies, S&T agencies and private foundations all have a role to play in funding science.

Funder	Type
US NIH	S&T Agency
Gates Foundation	Private Foundation
Aggregate Industry	Other
European Commission	S&T Agency
USAID	Development Agency
US DOD	Other
Wellcome Trust	Private Foundation
UK DFID	S&T Agency
UK MRC	S&T Agency
Institut Pasteur	Private Foundation
Dutch DGIS	Development Agency
Australian NHMRC	S&T Agency

Development agencies are governmental bodies which channel aid funding to developing countries. These include agencies like the UK’s Department for International Development (DIFD), France’s Agence Française de Développement (AFD), US Aid and Japan’s International Cooperation Agency (JICA). The rationale

¹ Fifth Annual Global Funding of Innovation for Neglected Diseases: G-FINDER study, <http://policycures.org/downloads/GF2012%20Summary.pdf>

for these agencies' S&T funding is summed up by DFID, who state² that is driven by an aim to:

- Develop technologies that reduce poverty or the impact of poverty
- Deliver aid in a more cost-effective manner
- Increase understanding of development programmes

Given that S&T agencies focus much of their funding and attention on global societal challenges, and that – taking into account the interconnectedness addressed earlier – these challenges often disproportionately occur in or affect developing countries, it is natural activities with developing countries are funded. When funding activities, S&T agencies may look to partner with development agencies to leverage complementary expertise in development and research funding. Joint funding of antiretroviral therapy in Africa from the UK's Medical Research Council and DFID is one example of this (see case study).

**Case Study of Development Agency and Research Council Cooperation:
Treating HIV: DART trial (Development of Antiretroviral Therapy in Africa)³**

Antiretroviral therapy (ART) has been proven to effectively treat HIV positive adults. However, the cost of the extensive laboratory testing and monitoring can substantially increase the cost of delivering the treatment. The DART study, funded in part by the UK's Department for International Development (DIFD) and Medical Research Council (MRC) and undertaken by British and African researchers, provides evidence of how ART can be delivered without routine laboratory monitoring test results.

Participants were randomly allocated to one of two groups. The first group were seen by clinicians who received routine laboratory monitoring test results; the second group were seen by clinicians who were not automatically given these test results. No significant difference in 5 year survival rates were found between the two groups. Delivering ART in a far more cost effective way could allow a third more people to be treated, and suggests that treatment can be extended to those living in remote areas far from hospital laboratories.

The trial has also shown that giving participants the antibiotic, co-trimoxazole, every day in combination with ART cut the risk of death by 50 per cent in the first 18 months of treatment. Co-trimoxazole is a widely available, low-cost antibiotic that's used in low income countries to treat and prevent common infections. The results of the trial are also being implemented in the UK with some hospitals and clinics changing their policy to reduce routine laboratory testing, and changes in national guidelines expected to follow.

²How we do research, DFID, <http://www.dfid.gov.uk/What-we-do/Research-and-evidence/How-we-do-research/>

³ UK Collaborative on Development Sciences, <http://www.ukcds.org.uk/feature-Delivering-more-effective-cheaper-HIV-therapy-in-Africa-573.html>

An important role is played by international charitable foundations. The Gates Foundation was established in 1994 and has an endowment of \$36.2billion⁴, meaning that its annual disbursements equal and in many cases exceed development funding from nation states. The independence of these foundations and their large endowments enable them to make longer-term investments, insulated from political changes which may change the funding and direction of international development agencies.

The second largest private funder of medical research, the Wellcome Trust, is a global charitable foundation with headquarters at the United Kingdom. The Wellcome Trust is one of the largest funders of scientific, medical and animal health research globally. Significant portion of its funding is used to support research and capacity strengthening in low and middle income countries. The aim of the Trust is to “achieve extraordinary improvements in health by supporting the brightest minds.” In Southeast Asia, Wellcome Trust’s overseas program is carried out by the Oxford University Clinical Research Unit. It has two major centres, one in Thailand at Mahidol University and one in Viet Nam based within the hospital system and embedded in the Vietnamese health system. It also has multiple sites across the region, having establishments in Lao PDR, at the border of Myanmar and Thailand. The aim is to have a positive impact on health and science in Viet Nam and, by extension, globally.

International financial institutions (IFIs) are creations of two or more nations and able to operate in multiple countries. These include organisations primarily established to fund development, such as the World Bank and the Asian Development Bank (ADB). The latter organisation is one of the more relevant bodies for Europe-Southeast Asia cooperation, as it aims to facilitate economic development in Asia. The ADB focuses its work on poverty reduction and ensuring growth across the Asia and Pacific. The main devices for assistance are loans, grants, policy dialogue, technical assistance and equity investments. Major priorities that may be supported are:

- Systems-based approach to sustainable economic development, in particular, using spatial analysis to improve planning;
- Natural capital accounting (valuation of natural resources)
- Agriculture for natural production, focusing on nutrition;
- Energy intensity including transportation of production; and,
- Enabling environment for investment, strengthening services and opening the door for sustainable private investment.

⁴ <http://www.gatesfoundation.org/about/Pages/foundation-fact-sheet.aspx>

The ADB continues to support sustainable growth in the Asia Pacific Region and adopts an inclusive development particularly in meeting food, water and energy security demands.

UN Agencies such as the Food Agriculture Organization (FAO) and the World Health Organisation (WHO) are also important bodies in this landscape. The WHO has as one of its six objectives 'stimulating the generation, translation and dissemination of valuable knowledge'⁵. The Food and Agriculture Organization (FAO), a specialized agency of the United Nations, takes the lead in reducing hunger, modernizing and improving agriculture, forestry and fisheries practices, ensuring good nutrition and food security for all. The FAO estimates that there is a need to increase the global food production by 70% by 2050 to be able to feed the people of the world and cited that among the challenges confronting the world's agriculture now is to provide more food, to adapt to climate change and contribute to climate change mitigation. One of FAO's strategic cooperation is on climate smart agriculture, given Southeast Asia's high vulnerability to the changing climate conditions. The approach starts with the bigger efforts to sustainable development and requires quality action and good governance of the food systems.

Cooperation Models

Cooperation with aid organisations can be carried out on a project by project or programme basis, or at a national and multinational level through bilateral arrangements and regional fora.

International Cooperation through Bilateral Arrangements

Cooperation with countries providing official development assistance such as Japan is strong. The Japan International Cooperation Agency (JICA) embarks on research partnerships for sustainable development, aimed at increasing knowledge and capacity on areas such as environment and energy, bio resources, the natural disaster prevention and infectious diseases. An emphasis is placed on developing common solution to common issues. For example, there is a commonality between Japan and the Philippines in that both are prone to earthquakes. Hence, there is a strong partnership for disaster risk reduction and management between the two countries. JICA's assistance comes in the form of grant aid, loans, technical cooperation programmes, development research, training programmes, volunteer programmes and disaster relief teams.

Cooperation through existing regional fora

Exchange of information and complementary activities between existing fora provide good opportunity to foster research and development cooperation between Southeast

⁵ <http://www.who.int/about/role/en/index.html>

Asia and Europe. The Council on Health Research for Development (COHRED), an international non-governmental organization supporting countries to build systems on health research, may share its experiences and lessons learned on activities that are relevant to the objectives of the ASEAN Network for Drugs, Diagnostics and Vaccines Innovation (ASEAN NDI), which is being coordinated by the Sub-Committee on Biotechnology (SCB) under the ASEAN Committee on Science and Technology (COST).

Addressing Societal Challenges

Global societal challenges provide an appealing focus for development agencies' research funding. Challenges such as food security, access to clean water and infectious diseases have a disproportionate impact on developing countries and slow their progress, whilst potentially having an impact on developed world countries via the interconnectedness of societies and economies.

Food, Water and Climate

Many of the societal challenges affecting South-East Asia relate to food and water. These challenges have a complex interrelationship with the issue of climate change. Agricultural production is one contributor of greenhouse gases, leading to global warming. Warming increases the incidence of extreme weather events, causing droughts or flooding- this in turn can inundate cultivated land and reduce food yields.

Millennium Development Goal 1.3 seeks to 'reduce by half the proportion of people who suffer from hunger'⁶, yet a growing world population and increasing affluence leads the World Bank to predict that global food demand will increase by 50% by 2030.⁷ Increasing the productivity of agriculture through more efficient farming methods, and the introduction of new technologies such as fertilisers enables increases in production whilst conserving land and water inputs. This can reduce local food shortages and provide surpluses which can be exported, generating income for developing countries. South-East Asian countries such as Thailand and Vietnam are already major exporters of rice and farmed fish. Developed world countries are often consumers of these agricultural products, and therefore have a shared interest in ensuring that food is safe to consume, and an increasing ethical interest in food production being environmentally and societally sustainable.

In 2011 the UK launched a Global Food Security strategic plan⁸ with participation from DFID, research councils and other department and funding bodies. The plan

⁶Millennium Development Goals, UN Development Programme
<http://www.undp.org/content/undp/en/home/mdgoverview.html>

⁷ Water and Food Security, UN Department of Economic and Social Affairs,
http://www.un.org/waterforlifedecade/food_security.shtml

⁸Research strategy launched to tackle food security crisis, 10 February 2011
<http://www.bbsrc.ac.uk/news/food-security/2011/110210-pr-strategy-to-help-food-security-challenge.aspx>

aims to direct development and research funding to activities which develop economic resilience, resource efficiency, sustainable food production and supply and sustainable, healthy, and safe diets. The plan also aims to develop the sustainability of ecosystems that relate to food production and to reduce the negative environmental impacts of all aspects of the food system, with key priorities being the reduction of waste and greenhouse gas emissions from the food chain.

Water security is another global challenge with specific relevance for South-East Asia. This links to the issue of food, with one major challenge being to reduce the water intensity of agriculture, particularly with crops like rice which require 2-4,000l of water per kilogram produced. Many South-East Asian countries are affected by flooding, either triggered by extreme weather events or by seasonal monsoons. Improving resilience to flooding through a combination of monitoring, planning and relief activities is an important technological challenge.

The Danish Agency for International Development, DANIDA, has funded six research partnerships between Danish and Vietnamese organisations in the wider area of climate change, with topics including “Impacts of climate change and adapting bio-security measures for Northern Viet Nam's aquaculture”.⁹ The French Agency for Development (AFD) has contributed €2 million in funding to the HYCOS project, which is establishing a network of 12 hydro-meteorological stations along the Mekong River.

Health

South East Asia is often cited as having 9% of the world's population but 25% of the world's disease burden. Communicable diseases cause 6 of the region's 14 million annual deaths, which in turn contribute 42% of all the disability-adjusted life years lost. The region is a hub for new or emerging infectious diseases, including SARS, avian flu and artemisinin-resistant strains of malaria. The region is also an air travel hub, and an increasingly popular destination for medical tourism. European countries have long-term research activities in the region, including the Wellcome Trust centres and the French Institutes Pasteur.

Conclusions

Science and Technology is an important component in a strategy to address global societal challenges, and there is fertile ground for cooperation between research funding agencies and development organisations working in cooperation with developing countries.

⁹ Two New Research Partnerships on Climate Change , DANIDA, <http://vietnam.um.dk/en/danida-en/research-cooperation/pilot-research-cooperation-programme/two-new-research-partnerships-on-climate-change/>

The commitment to share knowledge and help one another provides for genuine and mutually beneficial partnerships. Close alignment, cooperation and coherence between sectoral policies in development and the scientific priorities of local researchers should be put in place to facilitate the achievement of the goals of both scientific and development cooperation.

Successful collaboration also takes into consideration the proper understanding and cultural awareness of the collaborating organizations. One must be aware of the cultural practices in the country to avoid problems in implementation of activities at the later stage of collaboration. What is normal in one country may not be acceptable in the other.

Partnerships based on matched values, shared priorities, synergies and mutual respect results to a long term relationship crucial to the success of cooperation. Partnerships spread in all directions, not only on the academic level, but also on the ground, and even the private sector. The involvement of as many stakeholders as possible ensures that all dimensions of the problem are addressed.

One of the measures of success in development cooperation is the alignment of the results of the project with the partner's priorities. Solutions to problems are matched with the appropriate R&D strategies as well as sustainability strategies which include efficient allocation and spending of resources. Sustainable improvements and prolonged capacity building need to be grounded in a local context, based on identified problems and priorities, and owned by people and organizations local to the environment.

Communication is one of the biggest obstacles in aligning research cooperation and development cooperation. Cultural differences often creates disjoints and misunderstandings. Priorities are simply not perfectly matched, with different priorities affected by personal, institutional, national, regional and international intents and purposes. The earlier the project is adjusted to conform with cultural norms, the less misunderstanding between cooperating institutions.

The political aspect of cooperation should also be considered. Changes in the leadership affect cooperation and the political will to carry out a project eases implementation of activities. Investment from development agencies can be affected by changes in the national political environment, resulting in reductions in funding or changes to priorities.

Flexibility in the use of funds is also an issue. The technical aspects of research projects may be easier than the government process of say, procuring equipment. Considering the time limitations in implementing projects, it may be necessary to have some leeway for adjustments in how funds are used

Both laboratory-based research and developmental projects must be given attention. The results of research and development activities must be operational. Research should have practical use, particularly in the developing countries. Information must

be continued to be validated and tested. To bridge the gap between the science community and the political sector, scientists, sociologists and policy analysts must work together to translate scientific knowledge into policies, programs and projects to create social impact.

Next Steps

Further engagement with development agencies will take place in the SEA-EU-NET project. Specific recommendations for that project include:

1. The Science and Technology activities funded by development agencies in South-East Asia should be mapped. The collaborations and capabilities developed by these projects could form the basis for further work within a joint programme or project.
2. The funding priorities of development agencies in specific societal challenges should be mapped, and a dialogue should be continued with these agencies. This would enable the identification and coordination of topics that would merit funding from national development agencies, research funding agencies or the European Commission.
3. Non-governmental organisations and foundations – specifically including the Bill and Melinda Gates Foundation and the Wellcome Trust – have large endowments, enabling them to make large, long-term investments. Cooperation with them should be developed, to ensure that priority activities are able to leverage funding from multiple sources.