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Workshop Report

Regional Workshop for Coordination of Research on Hydropower Development in the Lower Mekong Basin

Mekong River Commission Secretariat, Vientiane, Lao PDR

14-15 September 2010

Research on Hydropower in the Lower Mekong Basin Workshop

Day one – 14th September

Opening ceremony

- EC representative, Mr. Stefan Lock, welcomed the participants on behalf of the EU representation in Lao PDR, highlighting the need to improve cooperation in the region.
- Representative of Ministry of Foreign Affairs, Finland, the funder of this activity, Ms. Helena Ahola, stressed the need for improving cooperation in the region and between stakeholders from all sectors, also private sector stakeholders that are necessary to include, when discussing hydropower.
- SPLASH representative Miriam Feilberg from Danish Water Forum gave the background for this activity, the need to improve uptake of research in practice as well as inclusion of the private sector.
- Mekong River Commission (MRC) Chief Executive Officer, Mr. Jeremy Bird, welcomed participants to MRC and introduced activities in the region.

Introductory Session

Kim Chi Tran-Gulbrandsen, NVE and Splash coordinator for this workshop introduced the SPLASH project and its objectives related to:

1. Improve coordination of water research for development between European countries, to reduce duplication, exploit synergies and enhance progress to MDGs
2. Understand and synthesise good research management & practice, and ensure it is used
3. Speed up transfer of results into practice and policy through improved dialogue
4. Agree on joint activities, including funding of new research which will benefit from a trans-national approach

And she further explained how the objectives of this workshop on issues like research and knowledge transfer on topics related to hydropower, overview of existing knowledge and the interest of private sector in these research themes and research done by this sector were relevant for the Splash project. This is also the case for the more specific objectives on promotion of applications of research findings and results into practical and policy levels and improving capacity building using South-South cooperation besides North-South cooperation.

Lawrence Haas, ISH Policy and Strategy Consultant at MRC, gave an overview of hydropower development in Mekong as well as MRC activities aimed at bridging IWRM and energy/hydropower development in order to ensure or facilitate that decisions of hydropower are made in a river basin context. There is a large potential for hydropower development in the basin, mainly in Laos, whereas the main



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demand for energy is from Vietnam and Thailand. Stakeholders in the basin are concerned about the role of hydropower compared to sustainability and protection of water resources in a region that is low in human development and depending on water for fisheries, agriculture etc, and where poverty alleviation and economic growth has to be linked. Answering a question Mr. Haas pointed out that MRC is not a policy maker per se, but has the task to make information available for participating countries to develop policies.

Torkil Jønch Clausen, workshop facilitator, finally in this session explained the role of meeting and structure of the agenda, including the role of the 4 working groups and the mixture of working groups and plenary sessions.

Session one

Presentations on existing research, knowledge transfer and capacity building program in the LMB:

Kjell Repp, NVE, gave a synthesis of the academic reviews with regard to findings, gaps and needs as well as recommendations from the countries. When looking at the countries together common and cross-cutting challenges are:

- Interaction between human and nature, physical, environmental and socio-economic impacts
- Climate change and adaptation
- No linkage between research institutions and private sector
- Public sector and stakeholder involvement

Reviews will now be finalized and made available on the internet. Short summaries will be attached to this report as annexes.

Mika Marttunen, SYKE, presented the results of the internet questionnaire and interviews on multi-criteria decision analysis (MCDA) and water footprint related to hydropower development in the Mekong Region. The purpose was to establish the opinions of different actors to planning methods and practices in hydropower development projects, the multi-criteria decision analysis (MCDA) and water footprint approach and to contribute to analyzing the state-of-the-art in education of water resources planning at the universities in Lao PDR, Cambodia, Thailand and Vietnam.

The activity was performed as an internet questionnaire and combined with personal interviews carried out by one local consultant and Juha Sarkkula, SYKE. 44 persons answered (of which 22 to the Internet questionnaire).

Overall conclusions to this was that:

- Current planning practices including stakeholder involvement in hydro power development projects were widely considered inadequate.
- It is not only due to lack of appropriate methods but also that they are not used in an appropriate way or their results are not taken into account.
- There is a positive attitude toward MCDA and its use in the hydro power development projects, but currently the use of MCDA methods is very limited and further information is needed.
- The respondents were unanimous that more education is needed to improve planning practices in the hydropower development projects.

Tira Foran, CSIRO Ecosystem Sciences presented the report on: “Sustainable hydropower development, Involving the Private Sector in Research Collaboration”



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Private developers are key actors for hydropower and for economic and social development, but standards and objectives, also on regulation models and links among state, private sector and other stakeholders vary between projects. A typical financial model is based upon low returns until debts are paid and limited river basin master planning. There is a lack of integration between demand and supply such as electricity master planning.

The presentation raised four key issues for the discussion:

1. Mekong ecological resilience: Do we know enough about the consequences such as if which dams are built, would cause fisheries collapse?
2. The structure of the electricity industry: Would 'green power markets' increase the level of local benefit sharing?
3. State regulation, can this improved and how? Related issues are corruption, capacity building and the need for empowered participation & representation of affected people
4. Need for bottom-up model of hydropower development with respect to public interest in design, procurement and risk management

The study needs to be further developed on private sector involvement both in public research and their own research activities.

The discussion of session-one presentations touched upon:

Different approaches to sustainable development and private sector involvement either by providing incentives for this or by a strong regulatory framework with clear profiles on how to do it. An example was private participation in research which takes place in Vietnam, but the problem is that much is not made available for the public.

A concern was raised that if regulation becomes too strict, it would be difficult to attract private sector investments. However, another opinion was expressed that regulation that is thorough and effective will lower risks, attracting a different set of private sector investors than the risk-seeking ones, that we are seeing emerge in the Mekong.

Findings from MCDA questionnaire give a good background in order to develop recommendations for future studies related to MCDA. There are big differences in the current practices in the different countries which should be bear in mind when interpreting the results.

Can hydropower development be sustainable? One answer to this was that it is implicit that there is weak sustainability assumption (which means that trade-offs between economic, social and ecological objectives are allowed) and a need to work towards stronger sustainability (in which ecological sustainability requirement is emphasized). Stronger research in issues related to sustainable hydropower development would be beneficial in this process.

Session two - IWRM and Hydropower in the Mekong region

Juha Sarkkula, SYKE: Status of planning methods and educational programmes in support of LMB hydro power development

A general introduction to key IWRM components, their status and needs to improve the IWRM approach. Special focus should be paid on the spirit and will for integration, communication skills, social responsibility, multidisciplinary team work and true involvement of affected people in the development dialogue. Mr.



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Sarkkula further introduced key MRC activities related to IWRM such as:

- Basin Development Plan (hydrological modelling/DSF, scenarios, expert statements, stakeholder workshops)
- Initiative for Sustainable Hydropower (design guidelines, protocols/IHA, stakeholder cooperation, SEA of mainstream dams, benefit sharing, Procedure for Notification, Prior Consultation and Agreement (PNPCA, MA 1995), China cooperation)
- Social Impact Monitoring and Vulnerability Assessment (SIMVA, MRCS/Environment Programme)
- Fisheries Ecology, Valuation and Mitigation (FENV/Fisheries Programme)
- DSF extended to an Integrated Modelling Toolbox
- IWRM Programme initiated

Lawrence Haas, ISH Policy and Strategy Consultant at MRC, presented MRC programmes related to sustainable hydropower development and potential areas of future contribution by Research Networks. MRC see hydropower in river basin management plans perspectives. This programme has many opportunities for research cooperation.

The Initiative on Sustainable Hydropower (ISH) was formulated as a cross-cutting Initiative working with and through other MRC Programmes in 2008-2009 in a national and regional multi-stakeholder process. The ISH works with national and regional partners and is cooperating with MRC Bodies on research priorities such as: strategic communication, modelling tools, benefit sharing and translation of this into local levels, electricity-poverty links, sediment-nutrient topics, impact on fisheries, environmental flows, regulatory systems incorporating sustainability assessments, effectiveness of impact mitigation.

Other important element is the relevance of linking policy and practice at all stages of the planning and project cycle. Research must be relevant to stakeholder interests and their expectations.

In the discussion it was mentioned that IWRM cannot happen voluntary and there is a need for some kind of compulsory mechanism, but Mr. Sarkkula insisted that it is not possible to force the spirit of IWRM as this is a matter of communication and sharing experiences.

David Ngula, Nile Basin Initiative, gave a presentation on hydropower development in the Nile basin and started by introducing the Nile Basin Initiative (NBI).

Mr. Ngula gave an overview of the power sector status, the development of new projects and potential of different countries to develop hydropower within the Nile Basin. The approach of NBI to hydropower development is that it should be based on IWRM principles. NBI has a number of studies on regional projects and now the Eastern African countries are about to establish regional market for hydropower.

He observed that the problems and challenges in the Nile Basin are quite similar to those faced in the Mekong region and the recommended interventions include the need to formulate a regional hydropower development strategy to guide the development of potential hydropower resources so as to contribute to meeting the present and future demand in the region. The strategy must include the preparation of guidelines specific for hydropower development covering studies, design, construction, operation and de-commissioning stages.

Further he mentioned that an inventory needs be created of the comprehensive hydropower potential of the region and a regional hydropower database established. The major identified hydropower potential schemes of regional interest need to be subjected to studies with due consideration of multi-purpose aspects. The regional hydropower strategy should also address the issue of financing and implementation arrangements



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and building of the requisite capacity.

In a region (both Nile and Mekong) with a large hydropower potential it is necessary to develop the regional framework for cooperation. Improving knowledge and research is also important, and there is a need for a unit to coordinate and spearhead research on hydropower development.

Round table discussions

1st Session on research needs and topics. Feedback from the four groups on the questions below:

1. What kind of research, knowledge transfer and capacity building could contribute to sound private sector involvement and sustainable hydropower development?

- The private sector must be involved in the whole project cycle from design to evaluation.
- Research must be able to draw in local communities, integrate them in research activities as stakeholders. We need to look into how research actually influences practice and how private sector research can make an impact. There is a need for incentives to incorporate more social and environmental aspects in project design.
- Needs assessments are relevant on capacity building for sustainable hydropower development, public participation and in general research.
- Need for more network linking and information sharing.
- We should use existing networks, like Mpower for improving research/practice links and improving communication. Organising a regional stakeholder forum could be relevant.

2. What research topics and results are important to your activities – do they respond to your needs as a user, if not how could they?

- Risk and impact assessment of hydropower development upstream and downstream (environmental flows, sedimentation, fisheries, livelihoods, navigation, settlement, dam breaks).
- Impact of climate change on regional hydropower development, mitigation and adaptation.
- Differences across countries.
- Benefit sharing and trade-offs.
- Integrated and life-cycle assessments.
- New hydropower technologies and alternative hydropower options.

3. Which methods and products are you interested in (which format)?

- Case studies for instance involvement of civil society in the development of a specific EIA.
- Development of tools for evaluation of sustainable hydropower
- Community led research.
- Delta monitoring and improving modelling and databases.
- Accessible research outputs (Strategic communication).

In general gaps remain in translating theory to practise.



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Discussion:

How can we analyse all the information collected, like for this meeting a lot of material has been compiled, how to be of use outside this group? Simple reporting procedures from research are important, not academic reports, but briefing notes.

It is important not to blur the distinction between impact assessments and research dialogue between partners. The dialogue is important and must be ensured by constant activities. If governments wish to take this further, they need to participate in dialogue.

We should not only focus on negative aspects but also look at positive side of hydropower, like flood control, electrification and positive sides of resettlement as well as the way this is seen from day-to-day activities.

How will Splash take the information compiled further: This information is an important input to future activities, such as the development of joint research call on sustainable hydropower in the Mekong region to be funded by European Splash partners.

Research on Hydropower in the Lower Mekong Basin Workshop

Day two – 15th September

Summary Day 1:

This day began with a synthesis of discussions from the first day, which provided important information related to identification of common research topics, methodologies and ways to ensure transferring knowledge between sectors as well as inclusion of private sector in research.

There is a demand for an overall needs assessment on sustainable hydropower development and ways to include and cooperate with the private sector, also an analysis of capacity building needs for researchers, private and public sectors. Benefit sharing and trade-offs is an issue with a need for capacity building.

Another issue touched upon was the need for more knowledge on the impacts of hydropower. In the MRCS an IWRM model toolbox exists (hydrology, sediments/nutrients, primary production, fisheries, socio-economic indicators), but there is still need for more information on impact on fisheries, social and economic benefits and costs of hydropower development, social impact monitoring as well as resilience and vulnerability of the local communities to changes in natural resource availability and ecosystem services. There is a significant need for new primary data and information.

A general concern for governments' capacity to regulate the private sector was mentioned and capacity building on this issue can be relevant to ensure strategic planning and looking into different objectives and alternative energy sources or at large scale vs. small scale hydropower.

An ongoing discussion is how to secure dialogue between private sector, government and researchers. For example, in Laos there are activities to promote this, which can benefit from the discussions here. Further activities to promote development dialogue are encouraged. Needs are to create opportunities and safe spaces for dialogue and to provide professional negotiation capacity. To ensure this, dissemination of local language policy briefs, maximal involvement of stakeholders and improvement of researcher- practitioner communication are necessary.



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Session 3 – Linking Research to Practice

Jan Moen, NVE: “Interactions among states, private sector and academia” introduced a discussion about academic research and private investments in hydropower, the role and impact from academics to the private sector vis-à-vis sustainable development. He also presented examples of power reforms from Europe and America clearly showing that the political link is essential, and targeting and understanding the political processes are important. Political will, timing and coordinating are important factors for change in the power sector.

A core issue is how to influence the political processes to make new legislations and policies. Necessary input here is that regulators and other stakeholders well organized, existence of research institutions willing to organize and implement core activities to coordinate as well as private companies that are willing to make sponsorships. Important to discuss here is opportunities and barriers in the Mekong Basin?

Miriam Feilberg, DWF, “Application of research to policy and practical levels”, presented key Splash findings on the relevance of research development, barriers to uptake of research in practice and means to promote better links to practice such as improving communication.

Important messages to convey to policy makers are that research is relevant for development and contributes poverty reduction. Research and economic growth is closely linked: R&D have positive effect on growth, there is robust relationship between spending on R&D and economic growth. Improving water knowledge and management such as rain fall storage will lead to growth. Investment required for meeting MDG on water is 11.3 billion USD, whereas economic benefits are assessed to have 8-fold rate of return – 84 billion.

Splash key findings on the role of North-South (N/S) partnerships are that research uptake is improved where Southern researchers are involved and have ownership. N/S partnerships are formed between researchers known to each other already, but donors can influence nature of N/S partnerships by paying attention in call texts etc.

Sam Ath Chhith, The NGO Forum on Cambodia: Improving research on hydropower development in the Lower Mekong Basin: key issues, concerns and recommendations. An introduction to NGO involvement in Hydropower Issues in Cambodia and key activities such as promoting dialogue among stakeholders, raising awareness on the risks and benefits of hydropower, conducting and/or commissioning different types of research, capacity building of civil society to voice concerns and advocating for international best practice standards in energy planning

Key recommendations from the NGO Forum are to:

- Open research project designs to public scrutiny to improve its objectivity and scope
- Include stakeholders in the research process
- Improve information sharing and flows among all stakeholders
- Respect the added value of Community Based Research, especially in its ability to interpret microcosms and reflect local realities;
- Improve information dissemination to communities and stakeholders
- More research is needed in the Mekong region before informed development decisions can be made.
- The MRC should play a key role in ensuring policy-makers and the public fully understand benefits, risks and information gaps before decisions regarding development projects are made.



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Dao Trong Tu, CEWAREC, IWMI-CPWF Representative –Vietnam gave an outline of hydropower development in Vietnam, with key actors and interactions among key stakeholders and opened up for a discussion on limitations to community consultation during EIA processes and lack of public information. This was however questioned by the Vietnamese government representative in the workshop.

Mukand Babel, AIT, Contribution of academic activities at AIT to sustainable hydropower development in Asia.

AIT carry out research related to hydropower and sustainable development, also linked to IWRM, but Dr. Babel pointed out that as most of the large hydropower projects are developed by international investors, who also bring the critically needed technical and managerial expertise from overseas there is a general lack of qualified local specialists and skilled labor, also for project planning, implementation and operation. There is also shortage of human resources at key sector regulatory agencies to ensure cost-effectiveness and compliance with relevant government policies.

AIT find that hydropower can be developed and utilized, but there is a need for improved knowledge such as impact studies, careful planning and management while minimizing the negative social, environmental and health impacts AIT is ready to provide regional academic curriculum and research at the masters level in Sustainable Hydropower in collaboration with partners in the region and beyond.

If the knowledge base is improved, opportunities exist in order to optimize benefits from many existing dams, to address outstanding social issues and to strengthen environmental mitigation and restoration measures. AIT can assist here, but policy levels need to realize that management and operation practices must adapt to environmental change including climate change.

Kim Geheb, CGIAR Challenge Program on Water and Food (CPWF) presented experiences and strategies on bridging the gap between research and development in order to reduce poverty and foster development by optimizing the use of water in reservoirs. Improving coordination is an important tool in this respect, which can looking into the basics of good communication and creating spheres for influence, dialogue ‘spaces’ and multi-stakeholder platforms (MSPs), and by improving issues such as the need for capacity building and for taking advantage of innovative and creative media.

After this session the discussion continued in working groups.

Round table discussions

2nd Session on research needs and topics. Feedback from the four groups on the questions below:

1. Recommendations to improve research results transfer to users (including policy-makers and private sector):

- Need to identify users, targets groups among developers, researchers, policy makers and others; and engage them early in the process of research design. The projects must include this element in timeframe and resource distribution.
- Need for better dialogue and provision of facilities to connect between researchers and users, for instance key workshops targeted to decision makers, include them in the group giving messages.
- Create applicable and clear messages. Policy briefs and other kinds of material in a form that is targeting policy and decision makers are important. This must also emphasize the role of policy makers in the projects and its impact in the national context.
- Need for lobby activities – both formal and informal. Transfer of key research to high level meetings.



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- To improve this, findings must be translated into languages, which are easy to understand and simple. Findings should be acceptable for different groups of stakeholders. Need for champions, key persons who can translate this into local messages that are easily acceptable. We must build up institutional capacity to understand decision making processes.

- Develop communication strategies to include media, also regular broadcasts.

2. How to increase interactions and sustain dialogue among stakeholders:

- There is a need for a continuous and sustainable dialogue and for broad stakeholder partnerships (public/private partnerships), but the challenge is how to cooperate in the partnerships and attract new members here. The dialogue should include key organizations in a constructive dialogue among interested parties, which can lead to building confidence. Open annual stakeholder meetings could contribute to building trust.
- Building informal relations between research, private sector and governance levels could be valuable. There is a need to overcome the gap between researchers and communities.
- Researchers and practitioners need to understand each other better. Researchers must communicate findings better and policy makers could improve their understanding of interdisciplinary and research methods.
- Need to understand legal processes in the countries. One group had a discussion of research on hydropower, who is allowed to participate at which level in the countries as there are different rules and regulations about this.
- We must exchange knowledge and information through relevant forums, publications, and websites and transform information into a knowledge base through systematic processes in the countries.

3. How to improve funding for research and dissemination

- Disseminate information on research need assessments. In this workshop and the country reviews an initial overview of needs and gaps was made, which should be disseminated broadly.
- Research is generally funded by universities, but there is also a need for more training, also linked to private sector.
- We also need to get funding from private sector to research. They should set aside their own funds.
- Doing an institutional mapping on funding sources.
- Basket funds set-up to attract more funding from international
- Create mechanisms and institutional arrangements for research networks

Special session on Multi-criteria Decision Analysis (MCDA) and its application opportunities in environmental planning and decision making.

MCDA was presented by **Mr. Mika Marttunen, SYKE**

The session covered the following issues:

- Phases of the MCDA analysis
- Experiences from real-life projects
- Application opportunities in hydropower development projects



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- Demonstration of Web-HIPRE software on MCDA

Based on the results of the SPLASH questionnaire and experiences from real-life projects, MCDA would be a very useful tool in the planning and evaluation hydro power development projects. For instance, it could be applied to the comparison of long-term strategies and scenarios, evaluation of the sustainability of different projects, comparison of alternative project options, evaluation of different mitigation and compensation measures and definition of the scope and requirements of EIA. One way to learn the philosophy and use of MCDA is a retrospective analysis of a completed project. In addition, MCDA can provide great support when the principles of IWRM are implemented into the practice.

The reflection on the workshop discussions from the MCDA perspective was presented. MCDA can support the identification of research needs and policy related participation. Before planning impact studies and information needs it is important to identify the decision making or policy evaluations situation that they would relate to. MCDA often reveals lack of understanding of cause and effect chains and new information needs. MCDA can also be used in the stakeholder involvement to find out stakeholders' opinions to alternative options. The advantage of MCDA is that it produces information in the format which can be easily utilized in the decision making.

More information on MCDA can be obtained from SYKE: Mika Marttunen: mika.marttunen@ymparisto.fi

Tira Foran: Synthesis of the second day

Discussions on the second day of the workshop covered the dimensions of knowledge production, its technical content, the legitimacy of research and response to research by outsiders, looking into the very important question: does research meet communities' needs?

It can be a challenge that technical knowledge may have a high scientific quality but may not meet all users' needs in terms of local languages, policy messages. Therefore information to stakeholders in a less scientific form is important. We must also remember that knowledge produced without stakeholder consultation may not be perceived as legitimate by stakeholders.

Contexts and Stakeholders are diverse and there is a need for participatory research. This is important to avoid an outcome where knowledge that does not fit with users' goals & priorities is produced, but rejected by key stakeholders, however we need to keep in mind that stakeholders' existing goals and priorities may be part of the problem.

Generating and dissemination of research related to sustainable development also implies re-thinking established processes, priorities and values. Thus producing usable knowledge becomes even more challenging and there is a need for dialogue about more sustainable processes. Case studies on impacts etc can make findings more relevant for users.

But related to hydropower we are facing a challenge of the rapid pace of hydropower development in this region.



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Torkil Jønch Clausen, DHI, summarised the workshop and its conclusions

This workshop was organised to discuss 5 important questions:

1. Assess the needs in curriculum reform, research and capacity building programs at the academic level in order to contribute to sustainable hydropower development in the basin
2. Assess the relationships between research activities (ongoing or under preparation) and activities carried out by development and management actors/organisations in the basin
3. Identify the existing links, communication degree / gaps and mechanisms among the water sector actors (researchers, development actors, private sector and policy-makers) with regard to research related to hydropower development
4. Identify and assess means to enhance the application of research results to the policy and practical levels, and contribution of research activities to the sustainable hydropower development in the basin.
5. Identify and assess means to enhance the contribution of research, knowledge transfer and capacity building programmes at universities to contribute to MRC programmes in hydropower development

As you will be able to see from the report, we did address these issues and have important feedback to Splash.

Important to note further is that more than 60 people from all countries and providing inspiration even from far away as the Nile and representing all spheres of society participated in plenary sessions and actively contributing to a good working group sessions.

We started by setting the stage: learning what Splash is and getting an introduction to the setting in the Mekong basin, the research reviews and the questionnaire on MCDA and water footprints.

We also gained an insight in what we are doing for sustainable hydropower development. A lot is happening in the region, but we are still a long way before sustainability. There are many needs to achieve this, not only on technology as we normally hear, but more on social impacts and a lot on benefit sharing, improving on laws and regulations. How can we make private sector an interesting partner for development?

There has also been focus on understandable and accessible information and cooperation among different stakeholders.

The second day started by looking at state and private research for development cooperation and experiences to learn from other regions. We also had an introduction to benefits from investing in research and technological development and in improving water management. Investing in both research and water managements is good business. We can see that it pays off, but have to ask ourselves: why does it not get off, perhaps we have a lack in communication and in developing partnerships among research stakeholders.

We have also learned about MCDA, which could be a good tool for systematic involvement of stakeholders.

Also today there was a good group work, again focussing on communication, dialogue and partnerships.

We covered a lot of ground that now has to be put into reports testing if Splash partners are able to get the message across.



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Closing ceremony

SPLASH representative, Miriam Feilberg, DWF and Kjell Repp, NVE closed the workshop by thanking participants for a very active cooperation during the workshop. This contributed to establishing a research agenda on sustainable hydropower development in the region, which we will now develop into a concept note and propose to the European Splash partners as an idea for a joint research call related to development of sustainable hydropower in the Mekong.

MRC was thanked for hosting the workshop and the Finnish Ministry of Foreign Affairs for funding this activity, which not only includes the workshop but also the preparatory activities such as the research reviews.



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**OUTLINES OF NORTH-SOUTH-SOUTH
RESEARCH PROJECTS & CAPACITY
BUILDING PROGRAMS
RELATED TO SUSTAINABLE
HYDROPOWER FOR THE LOWER
MEKONG BASIN**

Based on the needs and gaps identified at the SPLASH-Mekong workshop (MRCS, Vientiane, Lao PDR, 14-15 September 2010) and recommendations from the workshop participants and from the reviews done by the local/regional consultants, the topics/themes for the research and capacity building projects/programs should focus on technical, governance, institutional, financial, environmental and social aspects of hydropower in order to achieve sustainable hydropower in the Lower Mekong Basin (LMB).

1. Research

In summary, the research topics include:

- Risk and impact assessments of hydropower for the sustainable development
- Climate change and its impact on hydropower: status, impact assessment & response indicators/parameters; adaptation and mitigation measures development at local, national and regional levels.
- Benefit-sharing from hydropower and trade-offs between different management options
- Payments for ecological services (PES)
- Development and policy research in governance and distributional issues related to hydropower
- Public-private partnership (PPP)
- Integrated and life-cycle assessments on economic and environmental sustainability of energy solutions
- CDM & greenhouse gas reduction, carbon footprint, alternative energy, green energy including new hydropower technologies and alternative clean energy options
- Case studies of conditions, solutions and impacts across countries related to hydropower and development
- Regulatory systems incorporate sustainable considerations
- Impact mitigation effectiveness
- Food security, energy security and tradeoffs
- Fishery cumulative impacts
- Databases & knowledge bases systems; information system & hydro-informatics; technology transfers on GIS
- More research works to address three main adopted strategic operation directives (SODs):
 - No. 1: develop mechanisms in IWRM with participation of all stakeholders;
 - No. 2: conserve, develop and rehabilitate natural and man-made water sources to increase water supply and distribution efficiency. This is particularly important for Cambodia where space for large water storage is limited , erratic rainfall regime and low technical and financial capacity; and
 - No. 3: develop monitoring and warning system for mitigating natural/water resources disaster.
- Water footprint and MCDA: To promote the understanding of water footprints in the region a proposal is a study of the water footprint of a particular hydropower plant on one

of the Mekong tributaries and the impacts of this for agriculture, forestry, industry, fisheries, livelihoods etc in the related sub-basin. Demonstrating the application opportunities of multi-criteria decision analysis (MCDA) in the systematic evaluation of hydropower development alternatives and in the stakeholder involvement.

- Research in IWRM with integration with land utilization (IWLRM)

2. Capacity building

Regarding the capacity building programs, below are needs and gaps reported by countries:

Cambodia:

Impact of the Great Lake flow regime as caused by dam development, such as flood pulse, decrease in flooded areas, increase in water level during the dry season, impact on the lake ecosystem, etc. need more understanding and awareness building.

There is significant gap between political will and need for energy and the existing financial and local technical and managerial capacities to achieve sustainable hydropower development in the country. Only a few universities in the country have some programmes related to water resources development and management and have developed limited research programmes. Sustainable hydropower development is new area to universities in Cambodia.

Lao:

Understanding and awareness of issues on water and water-hydropower related topics are questionable among those practitioners and decision markers. It might be said that water availability is quite well perceived, but water footprints, water-hydropower development linkage, effects of climate change on water are unclear to many people. Training program organized with specific focuses may improve the situation of lack of knowledge, but to shift to the regional scientific arena, priority should be given to educational institutions by technical and/or expertise assistance.

Thailand:

- More research studies & preparations on regulations/legal frameworks on PPP.
- Urgent needs for more research and education/training programs on the development of regulations and guidelines on the expanded quality of life measure/indicator on the Health Impact Assessment (HIA)
- Needs of linkage and strengthening existing research, knowledge transfer and capacity building projects/programs on sustainable hydropower and IWRM, that are organized by universities and institutions.

- Strengthening and capacity building activities on stakeholder participation and public private partnership processes.

Vietnam:

- Develop an academic program focus on using scientific, social scientific, humanistic approaches to solve environment-related issues; provide knowledge and skills in policy-making, politics, law, economics, social aspects, planning, pollution control, natural resources, and the interactions of human beings and nature;
- Develop an academic program to focus on planning, developing, managing, and evaluating programs to protect and regulate natural habitats and renewable natural resources, provide knowledge in natural resource economics, management techniques for various habitats, applicable laws and policies, administrative and communication skills, and public relations.
- Develop an academic program to focus on cost-benefit analysis, environmental impact assessment, evaluation and assessment of alternative resource management strategies; analyzing water footprints of different development options, policy evaluation and monitoring; and analytic tools for studying how hydropower developments affect to the ecological, social and economic system.

As seen above, Cambodia and Lao has little existing capacity and high needs in capacity building in research and teaching. It is necessary to help them in curriculum development and production of teaching materials (especially in local language) on courses related to water resources management in general and in sustainable hydropower in particular, at the basic level (Bachelor degrees), and then Master degrees. The South-South cooperation would be very suitable and cost-effective for Cambodia and Laos to take advantage in the existing courses and materials from Thailand and Vietnam. In most of the cases, exiting courses use data and information from text books but rarely based on local actual data and information in order to teach and inform students about their real issues and solutions. Scholarships could be provided by donors for Cambodian and Laotian candidates to study in universities in Vietnam or Thailand.

For Thailand and Vietnam, the North-South cooperation in capacity building would be useful to assist them.

All countries in the Lower Mekong Basin need to improve knowledge in physical, environmental and socio-economic impacts of hydropower as well as climate change. The region is not familiar with the Strategic Environmental Assessment (SEA), which is another topic for capacity building in the region.

The concept of water footprints is only known by very few researchers and others in the Mekong region. To improve the understanding of this subject, capacity building activities on water footprints are proposed such as a regional course developed in cooperation with the ministries for the environment as well as the international water footprint network.

Currently the use of MCDA methods is very limited in the region. This is mainly because there is practically no expertise in MCDA. Another important reason is that the application opportunities

of MCDA are not known. Generally, the respondents were very interested in participating in various trainings. Most attractive was the multi-criteria decision analysis. This is line with the outcome that MCDA method is not well known among the respondents. In general, the respondents considered its characteristics useful. Pilot projects where the use of the method is demonstrated were considered particularly useful.

Suggestions for the next steps in the capacity building of the use of MCDA:

- 1) Capacity building in the universities: student exchange between e.g. Aalto University, National University of Laos (NUOL) and Asian Institute of Technology (AIT), etc. Searching topics for thesis research in which MCDA approach could be applied. Preparatory contacts have been made with the Faculty of Engineering at NUOL and AIT.
- 2) Intensive training courses for specific audience: 3-5 days training courses related to MCDA for interested actors (e.g. developers, planners, authorities, universities, private sector consultants, NGOs).
- 3) Retrospective analysis of a completed project: One way to learn the philosophy and use of MCDA is to use the material from some realized projects and mimic the phases and principles of MCDA in the desk work, and then discuss the process and the results with relevant actors.
- 4) Identification of the interest of various experts to take part MCDA feasibility cases at the MRCS (e.g. ISH, EP/SIMVA, BDP, IKMP) and other organizations/networks (national agencies and authorities, M-POWER, Mekong Futures Programme, Challenge Programme/3S-case). In addition, potential situations where decision and planning support are needed are identified.
- 5) New pilot projects are launched in which the application opportunities of MCDA methods are demonstrated with the help of MCDA experts.



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Outlines of funding opportunities for research & capacity building projects related to sustainable hydropower in the Lower Mekong Basin

Several donors are active in the LMB and they have funded various programs in research and capacity building. Below is the list of agencies which fund various programs related to hydropower development in the region. Although hydropower is not set out as a topic for funding, research related to hydropower could be relevant under the themes of environment, clean energy, climate change, water resources management, etc.

There are some funding schemes to support individual southern institutes without the involvement of a northern institute. However, majority of the funding outlined here is for North-South cooperation, meaning that cooperation with a northern institute is an essential condition of the grants. The outlines are made based on experience of SPLASH partners and internet search, but it might not provide information about all agencies that fund projects related to the Mekong development and management. Although the SPLASH partners do their best to compose the list of available funding programs below, the outlines might not include all programs of each funding agency related to supporting the Mekong issues, nor to the themes/topics listed in the Outlines of “North-South-South Research Projects & Capacity Building Programs Related to Hydropower For the Lower Mekong Basin” because the funding agencies might have special agreements/programs with particular countries that we are not aware of.

The funding opportunities includes:

1. Programs

CGIAR Challenge Program on Water and Food is supporting a research program called the Mekong Basin Development Challenge (BDC). Component 4 of the Mekong BDC is led by Dr. Edsel Sajor of Asian Institute for Technology, representing a team of researchers affiliated with the M-POWER water governance network (www.mpower.net.org). (For details on the Mekong BDC, see Section 6 of review on private sector involvement by Foran et al.).

The CPWF has also funded Ubon Ratchatani University (UBU) in Northeast Thailand to administer a round of M-POWER research fellowships intended primarily for new scholars from the region. The CPWF contact for the Mekong region is Dr. Kim Geheb; the UBU contact is Dr. Kanokwan Manorom.

2. Countries

Australia:

The Australian Agency for International Development (AusAID) is a donor to a number of initiatives relevant to hydropower and governance in the Mekong region. In 2010 AusAID supported M-POWER researchers to undertake assessments of electricity planning in Cambodia, Vietnam, and Thailand. The assessments were trials of the 2009 draft Hydropower Sustainability

Assessment Protocol (HSAP). For details, see Section 7 of review on private sector involvement by Foran et al. The relevant AusAID contact is Mr. John Dore.

Belgium

Belgium strives for a peaceful and secure world where poverty is eradicated and where there are development opportunities for all. Belgian Development Cooperation sets out to achieve its objectives by concluding various partnerships: with governments in developing countries and other donors present in the partnership, with non-governmental actors in Belgium and its partner countries (through NGOs, universities and community-based organisations) and with multilateral organizations. Regarding the support to universities, these are projects with a maximum duration of five years which aim to strengthen the educational and research capacities of the Southern countries, with particular attention being given to strategic research projects. These must involve genuine development projects for the partner country. Regarding institutional university cooperation, the objective of this form of cooperation is to consolidate the educational, research and administrative capacities of a (limited) number of institutions in the South.

http://diplomatie.belgium.be/en/policy/development_cooperation/partnerships/non_governmental/universities/

Canada

The International Development Research Centre (IDRC) helps developing countries use science and technology to find practical, long-term solutions to the social, economic, and environmental problems they face. IDRC's Climate Change and Water program aims to help the world's most vulnerable people adapt to the water-related impacts of climate change. By helping to develop the research and science base in developing countries, they support research that improves climate change adaptation efforts, at the policy level and in practice.

(See link: http://www.idrc.ca/en/ev-1-201-1-DO_TOPIC.html)

Denmark

The Danish Ministry of Foreign Affairs and the Danish International Development Agency (DANIDA) has projects related to water in a number of African and Asian countries including Vietnam and Cambodia. It has previously had projects in Thailand. Denmark provides special bilateral environmental assistance to countries in Southern Africa and Southeast Asia and to the MRC. The objective is to co-operate with countries in order to further sustainable development and to support efforts to mitigate the effects of environmental pollution and the pressure on

natural resources. Some key areas are sustainable production and use of energy, and sustainable use of natural resources (including water) (see the link:

<http://www.um.dk/en/menu/DevelopmentPolicy/DanishDevelopmentPolicyCountries/EnvironmentalAssistance/>)

Finland

The Ministry for Foreign Affairs of Finland has supported research in other countries. For more information, see the link: <http://formin.finland.fi/public/Default.aspx?culture=en-US&contentlan=2>. Related to the LMB, the regional plan for the Mekong covers Cambodia, Laos, Thailand and Vietnam. Thematic cooperation has been incorporated into the regional plan. Thematic cooperation is implemented especially in less developed countries, Laos and Cambodia, and it strengthens regional integration and development. All projects in the Mekong region emphasise the cross-cutting themes. Regional cooperation projects in the Mekong region emphasise the natural resources and environmental perspective. Regional cooperation focuses on fields in which Finland has expertise and in which Finnish added value has been created. These fields include developing environmental management, forests, rural development, and the sustainable use of water and natural resources.

Related to renewable energy in the Mekong region, the Energy and Environment Partnership Programme with the Mekong Region (EEP) was launched in 2009. The programme includes Cambodia, Laos, Thailand and Vietnam, and the regional office of the programme is located in Bangkok. The aim is to improve the use of renewable energy and to reduce greenhouse gas emissions in the Mekong region. The immediate objective is to emphasise the use of renewable energy in the countries' strategies. Support is available for innovative projects, presentations and preparing reports, as well as for training and strengthening skills. Support is granted for actors in the public and private sector, universities, research institutes and NGOs. Particular focus is given to the poor and women in rural areas.

France

The Agence Française de Développement (AFD) uses a wide range of financial instruments to underwrite its funding activities: grants, subsidies, guarantees, loans, equity shareholdings, co-financing and local bank intermediation. The assistance as grants is also to support research in developing countries (<http://www.afd.fr/jahia/Jahia/lang/en/home/GouvernanceAFD#>)

Germany

The Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) is a federally owned organisation. They work worldwide in the field of international cooperation for sustainable

development. Their mandate is to support the German Government in achieving its development objectives. The core competency is capacity development for people, organisations and societies to shape development on a sustainable basis. This entails identifying problems and then developing and successfully implementing strategies to reach solutions. They support developing and emerging countries in building their capacities and managing the learning and change processes involved.

At regional level, GTZ has supported a few multi-country projects related to the Mekong development and management in the LMB such as water shed management, flood management, etc. (see link: <http://www.gtz.de/en/praxis/1374.htm>). Research funding supports research selected according to their degree of correspondence with the development policy principles of the German Federal Ministry for Economic Cooperation and Development (BMZ), related to agriculture but other themes are accepted (see link: <http://www.gtz.de/en/themen/laendliche-entwicklung/2005.htm>).

Japan

- Japan International Cooperation Agency (JICA) provides bilateral aid in the form of Technical Cooperation, Japanese ODA Loans and Grant Aid. In one of its missions in achieving human security, one of the strategies is “enhancing research and knowledge-sharing”. Through the establishment of the JICA Research Institute, JICA aims at putting its wisdom gained in the field to work, building broad networks of academics from Japan and elsewhere around the world to create new knowledge value in the field of international development assistance not just for Japan but also for the entire world. In 2010, JICA has started the projects in cooperation with Japan Science and Technology Agency (JST), after the conclusion of international agreements with governments of the partner countries. This program aspires to acquire new knowledge which may become the key to tackle global issues, among them environment/energy, bio-resources, and natural disaster prevention (including flood management), and also aspires to encourage the future use of acquired knowledge in society. The program aims at the human resource development and capacity-building of researchers and research institutes in developing countries through science and technology joint research cooperation with research institutes in Japan based on social needs in developing countries. In the joint program JICA will support project implementations in partner countries in cooperation with the research institutes in Japan; and JST will support the research institutes for the project activities and expenses occurred in Japan.

(<http://www.jica.go.jp/english/news/press/2010/100416.html>)

In FY2010, applications are accepted mainly in the following research projects.

- Research contributing to adaptation to climate change
- Research contributing to mitigation of climate change
- Toyota Foundation: provides grants for projects under the theme "Realizing a sustainable society" which addresses such issues as the finite nature of resources and environmental problems. It helps to promote partnership (collaboration/cooperation) with other

foundations in Japan and with overseas and international organizations. (see link: <http://www.toyotafound.or.jp/english/02program/>)

The Netherlands

NWO – the Netherlands national science organisation – Conflict and Cooperation over Natural Resources in Developing Countries research theme - see http://www.nwo.nl/nwohome.nsf/pages/NWOP_874DPX_Eng?open&nav=SPES_7AEA7F

Norway

- NORAD – the Norwegian Agency for Development Cooperation. (see link: <http://www.norad.no/en/Thematic+areas>). In summary, climate change and the environment are the main focus areas of Norwegian development policy. Within this theme, the focus relevant to the SPLASH-Mekong research outlines are on sustainable management of biological diversity and natural resources; climate change and access to clean energy; and management of water resources. Another relevant NORAD program is Clean Energy for Development, which aims at providing/improving access to sustainable, affordable and reliable energy services.

Support from NORAD is on the bilateral cooperation, focusing on capacity building and institutional strengthening. In the LMB, Vietnam and Laos have received support within the Clean Energy for Development Program. NORAD does not provide any financial support to single research projects, researchers or North-South research cooperation. Neither does NORAD support researchers or master students applying for financial support to participate in a workshop, conference or doing a master thesis abroad. All support for research projects is channelled through research programmes administered by the Research Council of Norway.

- The Research Council of Norway (see link http://www.forskingsradet.no/en/Find_programme_webpages/1184150364113). Among many programs, some suitable programs are listed her:
 - Clean energy for the future (see link: <http://www.forskingsradet.no/servlet/Satellite?c=Page&cid=1226993846927&pagename=renergi%2FHovedsidemal>)
 - Norway-Global Partner (see the link: <http://www.forskingsradet.no/servlet/Satellite?c=Page&cid=1224698160055&p=1224698160055&pagename=norglobal%2FHovedsidemal>)
 - Norwegian environmental research towards 2015 (MILJO2015) (see the link: <http://www.forskingsradet.no/servlet/Satellite?c=Page&cid=1224697848161&p=1224697848161&pagename=miljo2015%2FHovedsidemal>)

- The Norwegian Centre for International Cooperation in Higher Education (SIU) is a public Norwegian agency that promotes international cooperation in education and research. Within programs administered by the Research Council of Norway, the Norwegian Programme for Development, Research and Education (NUFU) supports independent academic cooperation based on initiatives from researchers and institutions in the South and relevant institutional partners in Norway (link: <http://www.siu.no/en/Programme-overview>). SIU also administrates Norad's Programme for Master Studies (NOMA). NOMA is a programme for providing financial support to develop and run Master Degree Programmes in the South through collaboration between local and Norwegian Higher Education Institutions.

Sweden

- The Swedish International Development Agency (SIDA) channels its resources through NGOs, multilateral cooperation, and the EU, among others and is interested in promoting the idea of "international development cooperation" to replace the one-sided giving indicated by the term "assistance." Supporting over 2,000 projects in over 100 countries (over 20 of them are specially designated as target countries), SIDA seeks to create partnerships with companies, popular movements, organizations, universities, and government agencies for its development projects. SIDA's geographic focus is on countries in Africa, Asia, Latin America, and Central and Eastern Europe. For more information, see the link: <http://www.sida.se/English/>
- International Foundation for Science (IFS) (<http://www.ifs.se/index.asp>): IFS is a research council with international operations and the mission to build the scientific capacity of developing countries in sciences related to the sustainable management of biological and water resources. Since 1974, they have provided support to more than 4600 IFS Grantees in some 100 developing countries in Africa, Asia and the Pacific, and Latin America and the Caribbean.

Switzerland

Swiss Agency for Development and Cooperation (SDC)'s support for research is based on development policy considerations. It contributes to international organisations and networks, local research institutions and to research programmes. Its aim is through research and innovation to contribute to the reduction of poverty, to the promotion of human security or to the solution of the most urgent development and global problems. The main focus is on new findings and innovative approaches in areas such as agriculture, agricultural development and food security, conflict and transformation, health, water, resource management, climate change, governance and gender. (see link: http://www.deza.admin.ch/en/Home/Themes/Rule_of_Law_Democracy/Process_and_methodic_competencies_research/Research)

Thailand

The Thai Government has already provided some scholarships for students from the Mekong region to attend AIT and the main issue that they should address is on climate change/CDM/environmental management.

UK

- The Department for International Development (DFID) supports research through the Research for Development (R4D) portal. R4D is a free access on-line database containing information about research programmes supported by DFID. R4D provides the latest information about research funded by DFID, including news, case studies and details of current and past research in over 25,000 project and document records at <http://www.dfid.gov.uk/R4D/>
- UK Collaborative on Development Sciences (UKCDS) (<http://www.ukcds.org.uk/>) is a collaboration of 13 UK funders and stakeholders with an interest in international development research. As research funders and policy-makers from across government and science disciplines, they work together to provide a more coordinated approach to development sciences research and to maximise the impact of UK research funding on international development outcomes. They work with international partners to strengthen the research and innovation capacity of poorer countries. The current focus areas are climate change, capacity building, food security and research policy and practice.

USA

USAID is an independent federal government agency that receives overall foreign policy guidance from the Secretary of States. They work in close partnership with private voluntary organizations, indigenous organizations, universities, American businesses, international agencies, other governments, and other U.S. government agencies. They recognise that the continued social and economic development of the Asia region rests on the responsible stewardship and sustainable use of its natural resources. USAID's work in the Asia region includes promoting sound environmental conservation and energy practices. To learn more about USAID support to Asia, see the link <http://www.usaid.gov/locations/asia/>

To facilitate the participation of U.S. higher education institutions in a broad range of developmental activities, USAID has developed a guide: [Working with USAID: Guidance for Institutions of Higher Education](http://www.usaid.gov/our_work/education_and_universities/documents/working_with_usaid_guidance_higher_ed.pdf) (see the link: http://www.usaid.gov/our_work/education_and_universities/documents/working_with_usaid_guidance_higher_ed.pdf)

Higher Education for Development works in close partnership with the United States Agency for International Development (USAID) and the nation's six presidential higher education associations to support the involvement of higher education in development issues worldwide (<http://www.hedprogram.org/WhoWeAre/tabid/54/Default.aspx>).

3. SPLASH databases

SPLASH has developed some databases (see http://www.splash-era.net/search_dbs.php), which aims to provide information on:

- **SPLASH Partner-funded Programmes:** This is a searchable online database of existing SPLASH partner funded programmes, following the survey which was undertaken as part of Work Package 2. Here you can search by existing donor programmes, recipient countries and major themes. The results are provided as pdf documents giving an outline of each programme. The synthesis report on the Review of National Programmes on Water Science and Technology for the Developing World is accessible here as well.
- **Water for Development Yellow Pages:** Given the range of water for development research projects and programmes which are funded and carried out by the SPLASH partner countries, the SPLASH Water for Development Yellow Pages provides listings by country of online resources for development-related water research. This is an easy means of finding out information about these resources, which can be searched by the categories of universities and research institutes, research projects and programmes, information portals and repositories, and electronic discussion lists. Full website details are provided, including the main organisations involved and the research outputs they produce.
- **Capacity Building Directory:** This directory covers international programmes which develop capacity in the water for development sector; the directory is not meant to guide users to funded opportunities. Its target audience therefore is anyone interested in knowing who is involved in capacity development in the water sector. The introduction highlights the different ways that the directory can be used.

The themes covered in these SPLASH databases are broad within water related research and hydropower is one of the themes. These databases could be useful in facilitating southern institutes to search for potential collaborative northern partners (within the SPLASH member countries) as well as information some funded programs.



Recommendations for inclusion of various stakeholders in research and for supporting the regional researchers based on findings from the Regional Workshop for Coordination of Research on Hydropower Development in the Lower Mekong Basin (LMB), Vientiane, Lao PDR on 14-15 September 2010, a SPLASH EUWI Era-net activity funded by the Ministry for Foreign Affairs of Finland

Introduction

Inclusion of stakeholders in research and improving cooperation between research and practice was a key topic for the workshop being introduced in presentations and found interesting by participants at discussions in roundtable groups. Based on the presentations but not least on the feedback from participants in plenary and groups discussions, the following recommendations were developed. As an introduction to the recommendations some key observations from the presentations are noted below.

Presentations on improving interaction between stakeholders and researchers:

Jan Moen, NVE, introduced experiences from power sector reforms worldwide:

Promoting links between academic research, policy makers and private sector is a complex process with many different stakeholders involving numerous interests. It is therefore important to ensure that roles and ways to impact between actors are firm, visible and known by the actors. Mutual trust is important and private sector should not be seen only as profit seekers and research not only as impractical scholars. Inputs from both sides are needed for sustainable development.

Examples from Europe, America etc. show that political will, timing and coordination are important factors for change. To achieve this targeting and understanding the political processes are important and how to influence the political processes to make new legislation and policy are core issues for both research and private sector.

Moen presented examples of supporting organizations that are often needed in order to bridge academics, the power sector and the political processes. Other necessary inputs are that all partners are well organized and willing to coordinate. It is important to discuss concrete opportunities and barriers in the Mekong Basin and find ways to proceed.

Miriam Feilberg, DWF, presented SPLASH findings on the relevance of research development, barriers to uptake of research in practice and means to promote better links to practice such as improving communication:

Important messages to convey to policy makers and the private sector are that research is relevant for development and contributes to poverty reduction. Research and economic growth are closely linked: R&D have positive effect on growth, and there is a robust relationship between spending on R&D and economic growth. Improving water knowledge and management such as rain fall storage will lead to growth. Investment required for meeting the MDG on water is 11.3 billion USD, whereas economic benefits are assessed to have 8-fold rate of return – 84 bill. Presenting some of these findings contributes to increasing awareness about the need for investing in research by private sector as well as by public bodies.

Sam Ath Chhith, The NGO Forum on Cambodia presented NGO views on improving research: In Cambodia many NGOs are actively involved in different hydropower issues and key activities such as promoting dialogue among stakeholders, raising awareness on the risks and benefits of hydropower, conducting and/or commissioning different types of research, capacity building of civil society to voice concerns and advocating for international best practice standards in energy planning

Key recommendations from the NGO Forum related to research and stakeholder involvement are to:

- Open research project designs to public scrutiny to improve its objectivity and scope
- Improve information sharing and flows among all stakeholders
- Respect the added value of community based research i.e. to interpret local realities;
- Improve information and dissemination to communities and stakeholders

Workshop Recommendations

Recommendations based on roundtable discussions were divided into the following issues:

Recommendations to improve research results transfer to users:

- Need to identify users, targets groups among developers, researchers, policy makers and others and engage them early in the research design process. The projects must include this element in timeframe and resource distribution.
- Need for better dialogue and provision of facilities to connect between researchers and users, for instance key workshops targeted to decision makers, include them in the group giving messages.
- Create applicable and clear messages. Policy briefs and other kinds of material in a form that is targeting policy and decision makers are important. This must also emphasize the role of policy makers in the projects and its impact in the national context.
- Need for lobby activities – both formal and informal. Transfer of key research to high level meetings.
- Research findings must be translated into languages, which are easy to understand and simple. Findings should be acceptable for different groups of stakeholders. Need for champions, key persons who can translate into local messages that are easily acceptable.
- Develop communication strategies to include media, also regular broadcasts.

Recommendations to increase interaction and dialogue among stakeholders:

- There is a need for continuous and sustainable dialogue and for broad stakeholder partnerships (public/private partnerships), but the challenge is how to cooperate in the partnerships and attract new members here. The dialogue should include key organizations in a constructive dialogue among interested parties, which can lead to building confidence.
- Open annual stakeholder meetings could contribute to building trust.
- Researchers and practitioners need to understand each other better. Researchers must communicate findings better and policy makers could improve their understanding of interdisciplinarity and research methods.
- Need to understand legal processes in the countries, for example who is allowed to participate at which level in the countries. There are different rules and regulations about this.

- We must exchange knowledge and information through relevant forums, publications, and websites and transform information into a knowledge base through systematic processes in the countries.

Recommendations on supporting the regional researchers:

This issue was discussed related to two different aspects of support to regional researchers. One aspect was to improve funding and another aspect was to promote North-South research partnerships to improve regional access to global research findings and partnerships.

Improving research:

- Information on research need assessments like the one done for this workshop should be disseminated broadly to funders – regional and global.
- Funding from private sector on hydropower is needed.
- An institutional mapping on funding sources would provide opportunities for researchers' fundraising.
- Basket funding to attract more funding from international sources should be facilitated as well as the creation of mechanisms for research networks to attract international funding.

North-South research partnerships:

SPLASH key findings on the role of North-South partnerships are that research uptake is improved where Southern researchers are involved and have ownership. Participation in North-South-South projects is important for regional researchers as it gives them access to knowledge and networks. Improving Mekong participation in international projects will improve their access to international funding sources within the partnerships and in a long-term perspective also on individual basis.

It was further found by SPLASH that North/South partnerships are formed between researchers previously known to each other already, and that North/South partnerships are often asymmetric and priorities and methods reflect Northern traditions, but donors can influence the nature of partnerships by paying attention in call texts etc.

It is therefore recommended that research funders take the SPLASH findings into consideration when designing research programmes and ensure that funds are provided for:

- Regional participation in courses, conferences and other events to build a network necessary to be considered as partner in international research projects
- Ensuring genuine partnerships where all partners have ownership to the activity and where partners can meet early in the project or even before making the proposal to decide topics, methods and roles of partners.
- Making regional projects and findings available internationally such as on websites and at conferences, also in shorter forms such as policy briefs.



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Concluding remarks

There is a rapid development within hydropower in the Lower Mekong Basin, which provides energy for development, but challenges environmental and social sustainability. We need to know more, not only on technological solutions, but also broadly on environmental, social and other impacts and on benefit sharing from hydropower. Improving research and water management is good business, but must be given higher priority at the national level by giving higher priority and allowing adequate budget for research. Improving communication of research results to appropriate stakeholders, particularly decision makers will contribute to this.

Inclusion of stakeholders and develop partnerships must be promoted to facilitate dialogue and make sure new knowledge used by the private sector, policy makers and other practitioners.

SPLASH will take this further and seek funds for a joint research call funded by SPLASH partners on promotion of sustainable hydropower solutions for the Lower Mekong Basin.



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