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|  | **RSAT assessment** **Data collection template: Topics 1-10**Period of data collection: \_\_ / \_\_ / \_\_ to \_\_ / \_\_ / \_\_Name of Data collector:Name of Basin: *[content in this template is from RSAT assessment in the Upper Srepok River basin, User must adjust the question and content according to the River Basin assessed]* |

**Guidance Notes on RSAT data collection and how to use this template:**

1. The Data Collection Template is used in the preparation stage of the RSAT assessment to assist the assessors to collect data and evidence for each RSAT sub-topic and criteria. Once the data is collected, it will be used by the assessor to conduct the RSAT Gap Analysis against the performance statements, using the RSAT Gap Analysis Template.
2. The RSAT requires a large amount of data and information to be collected across the ten topics. The data and information will be collected by interviewing key people and by reviewing documentary or other types of evidence. 3-4 weeks of time should be allowed for RSAT data collection and may include travel to the sub-basin provinces to collect basin and local level data. Data should be collected from a number of different sources and stakeholder groups.
3. This template guides the assessor in the questions that should be asked under each sub-topic and criterion in order to collect specific information for the RSAT assessment. Collecting data for the RSAT is done by asking a series of questions and collecting information relevant to the topics and criteria. The RSAT asks for very specific information and the assessor should always refer to the performance statement to ensure the information they are collecting is relevant for the assessment.
4. For each topic, the questions in the left hand column of the table should be used as a guide only. You can change and adapt these questions depending on the context for the basin. Once you read each topic, you will develop some of your own questions to add to the table below and identify potential interviewees that can answer these questions and help you to find information. Some of the questions in the table below may not be relevant for the basin you are assessing. For example, if all the projects are in the planning stage and there are no operating projects, then the questions relating to operating stage are not relevant and you can delete them from the template. During the assessment you will have to justify your decision that they are “not relevant”.
5. **Stakeholder Groups:** in this section write a list of all of the key stakeholder groups for this topic and the basin. Do some research on the internet or by reviewing key documents to find out which groups are relevant for the topic and the basin. Some suggestions are provided for each topic as a guide.
6. **Requirements for topic overview**. During the assessment you will have to give an introduction to this topic for the basin. In this section, write down the important information for this topic that you will present as the topic overview. Some suggestions are provided for each topic as a guide.
7. **Sources of Data**: when planning your data collection, write down a list of the key sources of data and information for this topic. This is to help you to plan how to collect the data most efficiently and which stakeholders or websites you need to visit to collect data.

**Topic 1 Institutional capacity**

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| **Key stakeholders:***List the key stakeholder groups for the basin and the topic. Include a brief description of their key responsibilities. They should include the key stakeholder groups or agencies that you will contact to collect data for the topic.**Check government and other websites for information on who the key agencies and groups are.**The following stakeholder groups should be included:** *Local, provincial, national and transboundary agencies across different sectors that are relevant to the topic (energy, water, social, finance and investment, environment, agriculture and other sectors*
* *List the provinces in the sub-basin and the key provincial authorities*
* *Hydropower operators and developers that own projects in the basin*
* *Universities or research institutions in the basin that do work relevant to the topic*
* *Local or civil society groups with interests or work relevant to the topic*
* *Others*
 |
| **Requirements for topic overview** *In this box, add the following information:** Describe the key and brief institutional capacity with responsibilities for water resources and hydropower development in the basin
* Describe the institutional processes used by the various institutions and groups and the hydropower projects
* Which are the most relevant laws, plans and processes that are relevant for this topic and the agencies responsible for their implementation from local to national or transboundary levels.
* Describe any features in the basin or the data that are relevant for the topic (e.g. planning and regulatory processes, project details, basin characteristics of interest for the topic).
* Describe particular points of interest for the topic that you have discovered in your data collection
* Summarise the key findings of your gap analysis – a broad summary of key strengths and gaps and some of the key issues
 |
| **Sources of data*** List the main sources of data and information for the assessment. Where will you go to find data and information?

 *(Note – the detailed list of evidence used will be recorded on the Gap Analysis Template)* |
| *Sub-topic* | *Criteria* | *Questions to ask and information to be collected for the assessment based on the basin context and stage of development* | *Source – where will you find this information* | *Results**Use this column to record responses and information that you find during your data collection. You will then use this information for the gap analysis against criteria.* |
| **1.1 Trans-boundary institutional capacity** | River basin planning | Has a transboundary RBO been existed within an agreed framework (e.g. cooperation, information collection, and storage)?Have procedures and mechanisms been exited for countries to comply, notify, and consult for hydropower project on MR? |  |  |
| Energy/power sector planning and regulation | Are national energy agencies and regulatory authorities presented in transboundary basin planning processes?How does ERAV & EVN contribute to the processes? |  |  |
| Hydropower projects | How do hydropower projects study, communicate, and implement agreed frameworks for transboundary cooperation (e.g. during under-constructions and operations)? |  |  |
| Regulatory and governance | Are national laws and regulations compatible with international, regional, provincial agreements, plans, and policies for transboundary impact assessment?Have MOIT, MARD, and MONRE enforced to consult hydropower projects on international rivers? |  |  |
| **1.2 National to local institutional capacity** | River basin planning | Do a river basin planning (e.g. regional and provincial, etc.), management framework, and stakeholder participation exist across sectors?Does MOIT have arrangements for data management and sharing (from local to national levels)? Do conflict resolution and coordination mechanisms (from local to national levels) exist? |  |  |
| Energy/power sector planning and regulation | Do regional and provincial energy planning and regulatory agencies operate within a national sustainable development policy framework?Do hydropower projects have mechanisms for cross sectoral coordination as sustainability considerations? |  |  |
| Hydropower projects | Do hydropower projects comply with relevant national laws and regulations (from local to national level)?Have all relevant data and reports been published?Has EIA fully studied and is informed by adequate baseline data and applied the precautionary principle and supported by consultants? How are management plans implemented and measured? |  |  |
| Regulatory and governance | How is a national policy and regulatory framework for hydropower that promotes sustainable development and IWRM principles implemented?Do responsible agencies have enough the capacity to implement and enforce hydropower and related policies, plans, and regulations for new and existing projects? Do capacity-building plans exist to address gaps? |  |  |
| **1.3 Water and energy sector integrated planning** | River basin planning | Has RBO’s, national and provincial water resource agencies and water user groups been existed?How did MONRE, MOIT, & MARD consult in hydropower planning studies, impact assessment studies and the design and implementation of mitigation plans and operating rules for the projects? |  |  |
| Energy/power sector planning and regulation | Do Sre Pock and the provinces identify trade-offs and synergies between water and energy sectoral plans in power development plans and address in the weighting of development options? Have hydropower operating rules been institutionalised into water allocation policies and procedures in Sre Pock and the provinces? |  |  |
| Hydropower projects | Have hydropower projects been represented in river basin planning and management processes and shared data and information at all project stages?Do hydropower projects collaborate with other basin stakeholders on IWRM including environmental and social management and monitoring programs for Sre Pock and the provinces? |  |  |
| Regulatory and governance | Do regulatory and planning frameworks contain allocation of roles, responsibilities and mechanisms for integrated water and energy planning for hydropower, and requirements for co-operation, consultation and information sharing? How do mechanisms ensure policies and plans made by energy and water ministries and RBOs are aligned? Do capacity-building plans exist to address gaps? |  |  |

**Topic 2 Options assessment, sitting, and design**

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| **Key stakeholders:*** MOIT (e.g. ERAV and local Departments)
* MARD (e.g. General Administration of Irrigation, General Administration of Fisheries, and local Departments)
* MONRE (e.g. Administration of Water Resource Management and local Departments)
* Ministry of Construction
* What are needs for hydropower development in Sre Pok and the provinces?
* Has Sre Pok and the provinces have the assessment of water and energy services options and alternatives?
* Do they address siting and design processes for hydropower projects?
 |
| **Requirements for topic overview** * Describe the needs for hydropower development in Sre Pok and the provinces
* Describe the assessment of water and energy services options and alternatives
* Describe siting and design processes for hydropower projects
 |
| **Sources of data*** Technique reports; EIA reports
* Government plans and studies relating to hydropower development
 |
| *Sub-topic* | *Issue* | *Questions* | *Assessment methods* | *Outcomes* |
| **2.1 Demonstrated need and options assessment** | River basin planning | Is an assessment of all options and alternatives for water resource development in Sre Pok to meet their needs for water services been conducted in a consultative manner?Are selected hydropower projects for development fit a strategic with the needs for water services? |  |  |
| Energy/power sector planning and regulation | Who (e.g. in national and regional objectives, policies and plans) has the need for hydropower to meet energy and water services been assessed? Who are responsibility for an assessment of hydropower options and alternatives to meet demonstrated needs? |  |  |
| Regulatory and governance | Do national laws and regulations include requirements for strategic environmental and social assessment of energy and hydropower options and the investigation of alternatives for energy and water services?Are laws and regulations enough enforced? Who and how energy security, least cost supply considerations and fuel risks are explicitly managed in Sre Pok and the provinces? |  |  |
| **2.2 Sitting and design for basin wide sustainable development** | River basin planning | Have sitting and design are informed by adequate baseline data within the basin of Sre Pok?Do MOIT and EVN consider multiple project optimisation and cumulative impacts?Have systematic and ongoing monitoring are conducted to fill key knowledge gaps and are performed and changed to measure against baselines? |  |  |
| Energy/power sector planning and regulation | Has basin wide sustainable indicators been studied for all projects in Sre Pok?Has these studies are updated from feasibility and ESIA studies and monitoring programs to become more available and detailed information? |  |  |
| Hydropower projects | Has the sites and project configurations selected for development avoided significant risks, addressed a number of sustainability criteria, and identified technical and social risks at Sre Pok and the provinces?Has their performance is fully monitored? |  |  |
| Regulatory and governance | Have guidelines for hydropower sitting, design, and operational mitigation measures been studied and developed?Are compliance provisions included in projects’ agreements and enforced consistently across Sre Pok? |  |  |

**Topic 3 Economic contribution of hydropower**

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| **Key stakeholders:*** MOIT (e.g. ERAV and local Departments)
* MARD (e.g. General Administration of Irrigation, General Administration of Fisheries, and local Departments)
* MONRE (e.g. Administration of Water Resource Management and local Departments)
* MOPT (e.g. Statistic Administration and POPTs)
* Economically, have the financial capacity of hydropower projects met all costs over its lifetime?
* Equally, how they contribute a net benefit to the local people in Sre Pok?
* Financially, who are delivering the benefits?
 |
| **Requirements for topic overview** * Describe all costs of the hydropower project over lifetime
* Describe a process of contribution or sharing benefits to stakeholders
 |
| **Sources of data*** EIA reports
* Government, institutional, union, university studies relating to sharing benefits of the hydropower projects
* Statistic yearbook, independent survey and interview
 |
| *Sub-topic* | *Issue* | *Questions / information needs* | *Assessment methods* | *Source / interviewee* |
| **3.1 National economic and financial analysis** | River basin planning | Is the social and economic value take into account in different sectors including their sensitivity to water allocation policy in Sre Pok?Are hydropower projects developed maximise regional and provincial economic benefits and minimise risk?Do MOIT & MONRE contribute to socio-economic development and poverty alleviation targets at Sre Pok? |  |  |
| Energy/power sector planning and regulation | Do the Regional and Provincial Power Development Plan contain economic analysis (e.g. costs and benefits of hydropower development) and addresses social and environmental risks?Do regulatory and contract mechanisms secure long-term provincial revenue streams for hydropower projects and cost efficiency in power generation and transmission? |  |  |
| Hydropower projects | Do hydropower projects meet performance targets (e.g. revenue generation, water management, electricity dispatch, and asset conditions)?Do the projects meet commitments to compensate social and environmental mitigation over the economic life of the project?Do MOIT & EVN have enough financial capacity to address emerging un-expected issues? |  |  |
| Regulatory and governance | Due diligence is undertaken to ensure the financial and technical capacity of project proponents and their investors, including their capacity to deliver agreed environmental and social mitigation measures. Is the economic contribution of hydropower monitored and publicly disclosed in Sre Pok? |  |  |
| **3.2 Transboundary economic analysis** | River basin planning | Do a transboundary basin development planning process and associated studies address the important roles such as energy, hydropower, and water resources development in Sre Pok economic growing? How are database of relative hydropower projects contributed and shared by each region and province? |  |  |
| Energy/power sector planning and regulation | Are, economically, transboundary analysis and SEA of hydropower development options on rivers in Sre Pok conducted?Is the assessment of direct and indirect costs and benefits conducted within a planning and consultation framework agreed by sharing in Sre Pok (national, regional, and provincial levels) basin? |  |  |
| Hydropower projects | Are projects on rivers in Sre Pok accepted at levels as being reasonable and equitable within the context of regional agreements and economic development plans? |  |  |
| Regulatory and governance | Does a transboundary governance framework for regional and provincial cooperation on water and energy planning management exist?Is regularly progress towards basin and Sre Pok economic development goals monitored and reported? |  |  |

**Topic 4 Equitable sharing of hydropower costs and benefits**

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| **Key stakeholders:*** MOIT (e.g. ERAV and local Departments)
* MARD (e.g. General Administration of Irrigation, General Administration of Fisheries, and local Departments)
* MONRE (e.g. Administration of Water Resource Management and local Departments)
* MOPT (e.g. Statistic Administration and POPTs)
* Local committees, NGOs, Unions, and Hydropower companies
* Economically, do the sharing of hydropower costs and benefits conducts and deliver to different local levels and forms in Sre Pok?
* Equally, how they contribute a net benefit to the local people/river basin resident in Sre Pok amongst the first stakeholders along with the lifetime of hydropower projects?
* Financially, who are responsibilities to deliver the benefits?
 |
| **Requirements for topic overview** * Describe all costs and benefits of the hydropower project over lifetime
* Describe a process of contribution or sharing benefits to stakeholders
* Describe that whom/stakeholders are benefited
 |
| **Sources of data*** EIA reports
* Trans-Government, institutional, union, local citizens, university studies relating to sharing benefits of the hydropower projects
* Statistic yearbook, independent survey, and interview
 |
| *Sub-topic* | *Issue* | *Questions* | *Assessment methods* | *Outcomes* |
| **4.1 Transboundary benefit sharing** | River basin planning | Does, mutually, a transboundary basin development plan or strategy provide an agreed framework for riparian states to consult on cost and benefit sharing options?Does the plan include provisions for assessment (causes, effects (e.g. cumulative impacts), and benefits) of hydropower development on regional rivers or projects? |  |  |
| Energy/power sector planning and regulation | Are options for regional grid interconnection and joint hydropower project ownership assessed and considered? Are transboundary benefit sharing arrangements in hydropower project level agreements between riparian states embedded in Sre Pok? |  |  |
| Hydropower projects | Is assessment of transboundary cost and benefit sharing options, and target beneficiaries conducted for projects within the regional and provincial regulatory framework? |  |  |
| Regulatory and governance | Are regional obligations (e.g. risk assessment, benefit sharing, monitoring, and evaluation provisions) imbedded in Sre Pok mechanisms and procedures? |  |  |
| **4.2 National to local benefit sharing** | River basin planning | Does basin wide planning in Sre Pok include provision for distribution of hydropower costs and benefits across sectors and communities?Do specific plans exist for women, ethnic, vulnerable, minority groups and othersto access benefits?Is the development contribution of benefits monitored and using disaggregated data and publicly disclosed at the local level? |  |  |
| Energy/power sector planning and regulation | Are monetary and non-monetary benefits from hydropower distributed across sectors within a regional to local policy and budget allocation framework?Are communities in Sre Pok prioritised for rural and ethic electrification? |  |  |
| Hydropower projects | Are hydropower project benefits and forms of benefit sharing assessed and selected in consultation with beneficiaries?Are project level commitments for additional benefits and benefit sharing arrangements funded and implemented over agreed timeframes?Has hydropower projects maximised opportunities (e.g. training, employment and capacity building programs) to benefit communities in proximity? |  |  |
| Regulatory and governance | Do project agreements and regulatory mechanisms secure revenues and provide for consistent distribution of socio-economic benefits in Sre Pok? Do policy and planning approaches include provision to maximise local level benefits in Sre Pok?Are institutions and committees established to ensure delivery of agreed benefit sharing measures such as reporting of expenditure and monitoring performance? |  |  |
| **4.3 Financing ecosystem protection and other measures** | River basin planning | Do hydropower revenue and other funding mechanisms (e.g. Payment for Ecological Services) contribute to ongoing funding of environmental protection, natural resource management, and social projects in Sre Pok?Is there adequate resources and human capacity for environmental protection and natural resource management measures in Sre Pok? |  |  |
| Energy/power sector planning and regulation | Is assessment of opportunities for innovative financing including carbon financing (within the international and national framework) conducted for hydropower development in Sre Pok?Does regional and provincial energy policy guide the allocation and expenditure of funds derived from carbon financing in Sre Pok? |  |  |
| Hydropower projects | Do hydropower ESIA studies, management plans, and financial studies assess financing options (including carbon finance) to address environmental mitigation measures and environmental off-set programs in Sre Pok? |  |  |
| Regulatory and governance | Does a regulatory framework exist to secure sustainable financing from hydropower for a range of environmental off-set and watershed protection measures?Are regulations enforced compliance and the effectiveness of measures? Who are responsible authorities to monitor these enforces?Do natural resource management and environment agencies have adequate financial and human capacity to deliver core functions? |  |  |

**Topic 5 – Social issues and stakeholder consultation**

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| **Key stakeholders:*** MARD – Who is responsible for food security related issues in the Sre Pok basin / Dak Lak? Is there monitoring of feed scurity
* Who is responsible for poverty alleviation programs and socio-economic planning in the Sre Pok? – Ministry of Social Affairs and Department ? Ministry of Socio-economic development?
* Who is responsible to implement Millennium Development Goals (MDG) in Vietnam or Sre Pok provinces?
* Who is responsible for planning issues related to ethnic minority groups and indigenous people? Commission of Ethnic – Committee for Ethnic minorities – Sre Pok and National?
* MONRE & MOIT
* MPI – Statistical Administration
* Who collects socio-economic data in Sre Pok /Dak Lak (e.g. income, demographics etc)
* Which agency is responsible for land acquisition and compensation – Land Department, PONRE
* Who is responsible for resettlement – is there a government agency or committee with responsibility to plan, implement and monitor resettlement activities and the resettlement action plan? Committee for District and Community?
 |
| **Requirements for topic overview** * Describe the key stakeholders groups with responsibilities for socio-economic development, poverty alleviation, food security, ethnic minorities, resettlement (important) in the Sre Pok provinces / basin
* Describe how hydropower projects identify and manage these impacts (e.g. EIA) and who is responsible for addressing the social impacts of hydropower?
* Describe the participatory planning approaches used by the government agencies (how do they consult communities?) and the hydropower projects (e.g. public meetings)
* Where would the community go if they had a grievance about hydropower related issues and who would respond to this?
* Describe the level of data and information collected in the basin to inform planning on these issues
 |
| **Sources of data*** Key stakeholder groups and agencies
* EIA reports
* Resettlement Action Plans
* Government plans and studies relating to poverty alleviation, food security, socio-economic development etc
* Provincial and district level annual reports – committee
* University and Institute – social studies department
* Social NGO’s working in the Sre Pok
 |
| *Sub-topic* | *Issue* | *Questions* | *Assessment methods* | *Outcomes* |
| **5.1 Stakeholder identification and consultation** | River basin planning | Has an analysis been done of which groups are most affected by water resource planning decisions in the Sre Pok / Dak Lak? (Institute). Describe the work done.How do different water users in the Sre Pok communicate with each other and with the government about water use issues? Are there mechanisms for this communication (e.g. committee’s, RBO etc). Water users include irrigators, community water users, hydropower projects, water supply, fisheries, transport, flood control etc. |  |  |
| Energy/power sector planning and regulation | How does MOIT /EVN / ERAV consult with key stakeholder groups in the Sre Pok provinces when it does its hydropower planning and management. Are plans publicly disclosed? |  |  |
| Hydropower projects | How do hydropower projects identify key groups that are affected by their projects (e.g. public meeting during EIA)? Do hydropower companies have ongoing and two way communications with affected groups during operations stage? Are the studies and reports made available to the public? How do the companies deal with complaints from the affected groups? |  |  |
| Regulatory and governance | Are regulatory requirements for information disclosure and community consultation enforced and is there evidence of compliance? |  |  |
| **5.2 Assessment and management of basin wide social impacts** | River basin planning | What socio-economic baseline monitoring is there in the Sre Pok? Is there monitoring of socio-economic trends against indicators over time and how they relate to water resources? (e.g state of the basin report, provincial annual report).Is there monitoring of social well being indicators (e.g. sanitation, education levels, access to water supply, public health, child and maternal mortality etc)Is there a measureable improvement in social well -being and socio-economic indicators over time?Is socio economic data disaggregated by gender or ethnicity to see differences between groups? |  |  |
| Energy/power sector planning and regulation | MOIT and provincial committee - Have hydropower master plans selected project sites that avoid population displacement or significant social impacts? Check criteria in ranking studies to see if any social criteria? |  |  |
| Hydropower projects | Find evidence of consultative approaches in the ESIA, resettlement plans of hydropower projects etc. Were the studies informed by adequate social baseline data? Are the RAP’s and ESIA’s completed before projects are approved and construction commences? Is the timing of studies appropriate? Check dates of studies.Do the resettlement and social management plans include allocation of responsibility and funding? Are downstream impacts addressed or only resettlement impacts? |  |  |
| Regulatory and governance | How are the regulations relating to community participation implemented or enforced in the Sre Pok (e.g. resettlement, EIA, land acquisition)? Find evidence of participatory approaches (e.g. public meetings, committees). What is the institutional setting for resettlement in the Sre Pok provinces – are responsibilities clear and funds allocated for the implementation of plans etc. Describe how this works and what issues there are?Is there a legal process to resolve disputes (e.g. compensation entitlement) between developer and community? Is it used to resolve disputes?How does the Land Department and Land division under the committee assess the suitability / standard of land that is allocated for resettlement? |  |  |
| **5.3 Food security and poverty alleviation** | River basin planning | Is there data in the Sre Pok provinces on nutrition status (e.g. child malnutrition, protein intake, child mortality, wastage etc), health, income, food security? Is performance against indicators and targets (e.g. MDG) measured?Is the data disaggregated by gender and ethnicity?Is there evidence of an improvement in these indicators in the Sre Pok provinces? What are the key issues and how do they relate to water resources, including irrigation and hydropower? |  |  |
| Energy/power sector planning and regulation | Do the project ranking criteria include food security criteria and avoid significant risks? (e.g. multi-purpose projects for energy and food, irrigation and hydropower, etc.) |  |  |
| Hydropower projects | Are these food security impacts (nutrition, health protein etc) specifically assessed and managed in hydropower impact assessment studies and management plans? Do projects do any monitoring of these trends in the Sre Pok? |  |  |
| Regulatory and governance | Does the government have national and provincial targets and commitments relating to poverty alleviation and food security? Are plans to achieve targets implemented and is performance monitored. We are looking for evidence at the Sre Pok / provincial level, not national. Are they publicly disclosed? |  |  |
| **5.4 Indigenous peoples and ethnic minorities** | River basin planning | How are ethnic minority groups in the Sre Pok considered in water resource and hydropower planning processes? Who is responsible for looking at these issues? What monitoring and planning is conducted by the provincial authorities specifically for ethnic minority groups? |  |  |
| Hydropower projects | Do the projects have specific indigenous people’s management plans and communication approaches that are culturally appropriate? How do projects communicate and engage with affected ethnic minority groups? |  |  |
| Regulatory and governance | Are their regulatory requirements in ESIA decrees or other to address issues unique to ethnic minority groups? How do ethnic minority groups raise issues or concerns? Do they have legal processes available to them to resolve disputes? |  |  |

**Topic 6 Environmental management and ecosystem integrity**

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| **Key stakeholders:*** MONRE / PONRE, Department of Environment, Institute of Met and Hydrology – 1 and 5 year provincial environmental monitoring report submitted to national level
* Who is responsible for implementing hydropower project environmental management plans (e.g. EVN, Đại Hải Power Development & Investment Joint-Stock, Buon Don Hydropower Joint-Stock, etc.)
* MARD – (Institute of WR planning ), University of Water resources
* MARD - ADB 3S team
* Provincial Department of Science and Technology – Dak Lak or Central
* MRC
* National Park Authority (MARD, Department of Forestry Conservation Section, Special use forest : National Parks Division)
* NGO’s – WWF, IUCN
* Vietnam National University and Vietnam Academy of Science and Technology (VAST)
* EIA Department to review and approve EIA’s MONRE Environment Administration
* Threatened species – National Forest Protection Department (Department of Forestry Conservation Section – terrestrial)
* EIA review commission?
 |
| **Requirements for topic overview** * Which are the most relevant laws and decrees for environmental protection in Vietnam and who enforces them
* Describe who is responsible for environmental monitoring, management, biodiversity conservation, threatened species protection, national park management in the Sre Pok
* Describe (use a map if possible) the protected areas that exist in the Sre Pok basin
* Summary of key environmental issues and stressors in the basin based on current reports
* Describe where projects are located in relation to the protected areas and highlight environmental issues associated with projects
* Who is responsible for environmental management of hydropower project impacts (e.g. water quality problem in the reservoir or a fish kill)
 |
| **Sources of data*** EIA reports and EMP’s ? (M/PONRE, hydropower operators / EVN)
* 3S study (ADB team)
* Stakeholder groups listed above
* University and Institute – social studies department
* Social NGO’s working in the Sre Pok
 |
| *Sub-topic* | *Issue* | *Questions* | *Assessment methods* | *Outcomes* |
| **6.1 Assessment and management of environmental impacts** | River basin planning | Who collects environmental monitoring data (terrestrial and aquatic) in the basin and which parameters are measured systematically and long term? Is there a baseline data set?Is there a regular “State of the Sre Pok” basin report? Is there monitoring of trends and changes to environmental condition against indicators in the three provinces or the basin? Are the provincial environmental monitoring programs integrated, do they monitor the same things? Is the data long term and systematic or ad hoc? What are the problems or gaps with basin wide data? |  |  |
| Energy/power sector planning and regulation | Have MOIT conducted a strategic or cumulative impact assessment of the power development plan or hydropower development master plans in the Sre Pok? Ask MOIT / ERAV / MONRE how they include environmental conditions in project agreements, operating rules etc. Give examples (e.g. minimum release, flushing etc)What happens if new environmental or cumulative impacts arise as a result of hydropower projects? How is this managed in project agreements and operating rules (e.g. re-licensing)? |  |  |
| Hydropower projects | Have the projects in the sub-basin completed EIA’s and environmental management plans (EMP)? Do the EIA’s include the establishment of an environmental baseline and monitoring program? Do the projects conduct any monitoring or environmental management? Does another authority have this responsibility for individual projects? Are the EIA’s, management plans and monitoring reports publicly disclosed?  |  |  |
| Regulatory and governance | Is there EIA decrees and is it enforced effectively – what is the evidence that it is enforced? Who enforces the decree?Are there any government planning processes that assess and manage environmental impacts at a basin wide or cumulative level (not just project level)? |  |  |
| **6.2 Biodiversity conservation and ecosystem integrity impacts** | River basin planning | Is there data on biodiversity and ecology collected in the basin? Did EIA’s assess impacts to biodiversity and ecosystem processes? |  |  |
| Energy/power sector planning and regulation | How have MOIT hydropower planning (e.g. mater plans, options assessment) and site selection processes avoided or mitigation impacts to conservation areas (e.g. national parks). Hydropower master plan for Sre Pok – ranking studies? |  |  |
| Hydropower projects | Is there evidence that hydropower projects have addressed ecosystem connectivity (e.g. fish ladders, navigation locks, sediment by-pass) in their project design or operations? Were impacts to biodiversity conservation / habitat fragmentation assessed in the EIA? |  |  |
| Regulatory and governance | Are there regulations for environmental protection and biodiversity conservation? Find evidence of how it is enforced in the Sre Pok? How are national parks protected, wildlife threats etc in the Sre Pok? Have any biodiversity off-set zones been established for losses in biodiversity? |  |  |

**Topic 7 – Flows and reservoir management**

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| **Key stakeholders:*** MARD – national and provincial
* Irrigation Company under agricultural department
* Domestic Water Supply (Agriculture Dept)
* MONRE – national and provincial – include groundwater
* MOIT - ERAV
* Hydropower operators
* Operators of irrigation projects
* Flood control commander (MARD)
* Local water user groups
 |
| **Requirements for topic overview** * Describe how water is allocated in the Sre Pok basin and which are the responsible agencies to monitor and manage water use
* Describe the hydrological and water use data that is collected in the Sre Pok
* What are some of the water use issues in the basin? Are there any conflicts and who is responsible for managing these?
* What are the transboundary issues relating to water flows
* How are hydropower reservoirs operated – who makes decisions about water management. Is it ERAV, the hydropower companies operating the power station or MONRE or commander of flood (during flood season)?
* Do MONRE, ERAV, flood commander, and the operators co-ordinate with each other on water allocation decisions?
* Do downstream water users, including Cambodia have enough water in the dry season etc.
 |
| **Sources of data*** ...
 |
| *Sub-topic* | *Issue* | *Questions* | *Assessment methods* | *Outcomes* |
| **7.1 Multiple water use optimisation and efficiency** | River basin planning | What data is collected on water use and who collects it, how often, how many monitoring sites etc?Is there a hydrological model for the Upper Sre Pok (does it include Lower Sre Pok)?What does it address? Does it include modelling of hydropower operations or information on hydropower operations as an input?Has there been an assessment of future water use and trends, including climate change and water use scenarios? |  |  |
| Energy/power sector planning and regulation | Do government plans for hydropower prioritise multiple use projects? |  |  |
| Hydropower projects | What are the studies in the Sre Pok that look at water use and hydropower operations?Find evidence that hydropower projects in Sre Pok address multiple use opportunities (e.g. flood control, navigation, etc) How do the hydropower projects co-ordinate with other water users in the basin to achieve multiple use? Is there any co-ordination between irrigation an hydropower? |  |  |
| Regulatory and governance | Are their regulations and decrees that govern water use and allocation in the Sre Pok? How are the concession agreements negotiated to allocate water for hydropower? What transboundary arrangements are in place for water use between Cambodia and Vietnam? Are their legal processes to resolve water use conflicts? Are they used? How is water allocation enforced? Is compliance monitored? |  |  |
| **7.2 Reservoir planning and management** | River basin planning | How are operating rules set for hydropower projects and which agencies are consulted? What issues are there regarding operating rules and co-ordination amongst different water users? How are operating rules and hydropower water releases monitored? |  |  |
| Energy/power sector planning and regulation | How is the use of water for electricity generation and other uses optimised in the Upper Sre Pok? |  |  |
| Hydropower projects | How have reservoir impacts been avoided and mitigation (e.g. loss of forests, population displacement, etc.)?Who is responsible for reservoir management issues and how are these managed? E.g. water quality, log jams, safety, public access, bank erosion, flood management. |  |  |
| Regulatory and governance | How are responsibilities allocated for reservoir management and water use, bank erosion? How is compliance monitored and enforced? |  |  |
| **7.3 Co-ordinate hydropower operations** | River basin planning | How do hydropower projects in a cascade co-ordinate for water use management? How do hydropower projects co-ordinate with other projects in the basin, e.g. flood control and irrigation? |  |  |
| Energy/power sector planning and regulation | How does MOIT, EVN and ERAV negotiate and manage water allocation decisions (in both day to day operations and trading and in the project licences and agreements) to balance electricity generation with other water demands in the basin? |  |  |
| Hydropower projects | Are the design and operational procedures of hydropower projects in a cascade consistent (e.g. fish passage, sediment management, flow releases) and co-ordinated between projects? |  |  |
| Regulatory and governance | Are there transboundary arrangements to co-ordinate upstream water use in Vietnam with downstream water use in Cambodia? Are there standards or decrees that ensure consistent approaches for water management between projects? |  |  |
| **7.4 Downstream and environmental flows** | River basin planning | Has an assessment of environmental flows been conducted in the Upper Sre Pok and criteria established. What monitoring is conducted? How are downstream flow and minimum water release requirements determined for hydropower projects? Is the downstream flows monitored and compliance checked? |  |  |
| Energy/power sector planning and regulation | How are environmental constraints on water management (e.g. inter-reservoir operating rules, or minimum releases) included in electricity dispatch agreements with ERAV?   |  |  |
| Hydropower projects | Do any of the projects release water for the environment or downstream users? How is compliance monitored? |  |  |
| Regulatory and governance | What regulations govern water allocation for downstream? How are water releases to Cambodia negotiated and managed? Do EIA regulations require hydropower developers to conduct environmental flow assessments? Is it enforced? Are environmental flows monitored for their effectiveness? |  |  |
| **7.5 Flood and drought management**  | River basin planning | Describe the flood forecasting and monitoring system and how hydropower operations manage flood control requirements? |  |  |
| Energy/power sector planning and regulation | Do Concession Agreements and operating rules include compliance requirements for flood control? Is flood control prioritised over electricity generation in emergency events? |  |  |
| Hydropower projects | Do HP projects comply with flood control requirements? What design and operating measures are there to manage flood risks? |  |  |
| Regulatory and governance | Is there allocation of responsibility for flood risk management in the Sre Pok. Are their plans and policies and how are they enforced in the Sre Pok? How do different stakeholders co-ordinate to manage flood events? |  |  |