Kamala Basin strategy to support water resources management and basin planning in Nepal

Auro C. Almeida [a], Tira Foran [b], David J. Penton [b], Kapil Gnawali [c], Shahriar Wahid [b] and Susan M. Cuddy [b]

[a] CSIRO Environment, Sandy Bay, Tasmania; [b] CSIRO Environment, Canberra;
[c] Water and Energy Commission Secretariat, Kathmandu, Nepal
Email: auro.almeida@csiro.au

Abstract: A water resources development strategy for the Kamala River Basin in Nepal was developed with collaboration between the Government of Australia through CSIRO and the Government of Nepal through its Water and Energy Commission Secretariat, supported by national consultants, local and provincial governments, universities, non-government organisations and community members (CSIRO and WECS 2021).

The strategy identified, selected, and described the requirements for improvements to water resources management at basin scale considering technical, economical, institutional, social, and environmental aspects to guide a basin plan. Subsequent implementation of the agreed development and management actions adopt an inclusive approach, with representation of water users in the definition of goals and objectives, and assessment processes ensuring the ownership necessary to drive sustainable outcomes.

The Kamala Basin has an area of about 2,100 km^2 in southeast Nepal. It comprises three main landscape types: the Middle Mountains, Chure and Terai. The gently sloping to flat Terai is where most of the 610,000 population live and where agriculture and economic activity are more concentrated. The basin experiences significant water-related issues. These include monsoonal floods, high sediment loads increasing flood risks and damaging infrastructure, water unavailability during the dry season and accessibility constraints, and infrastructure services not meeting demands.

To support and guide the strategy, available base data of the region were assembled, and some new data collected locally. Extensive simulation modelling was undertaken to quantify water availability across the basin and a stakeholder mapping and engagement process was conducted. The strategic planning process was conducted through workshops with key representatives of the communities, to build consensus around the highest priority water-related development issues and future requirements and aspirations. This process resulted in three goals for the basin: (1) sustainable management of the Chure; (2) improved availability, use and allocation of water resources for livelihood generation, wellbeing, and economic growth; and (3) commercial and scientific agriculture for local economic prosperity and livelihood security. These goals were broken down into sub-goals which defined the key actions in practical terms as the pathways for achieving the goals.

To achieve the goals a group of actions were identified – some, such as formal institutional reform, increase collaboration across boundaries, and enhance policy processes, are common to all goals.

The strategy highlights development pathways and the challenges encountered and/or anticipated, with recommended approaches towards implementation. Preconditions for further steps have been identified as necessary actions, together with strategic actions to guide and focus subsequent efforts to enable key decision-making and confirmation of preferences. The recommendations for implementation include substantial physical (infrastructure) and non-physical (capability strengthening) components; both are essential to the way forward. Also identified is the sequencing – the order and timing of options individually and in combination.

The strategy implementation phase is currently underway with strong participatory approaches involving different levels of government and water users establishing priorities, responsibilities and feasible time frames.

REFERENCES

CSIRO and WECS, 2021. Water Resources Development Strategy for the Kamala River Basin, Nepal. CSIRO, Australia and Water and Energy Commission Secretariat, Government of Nepal, Kathmandu. https://doi.org/10.25919/131j-5d64

Keywords: *Water resources management strategy, basin plan, water availability, participatory approach*