Goal of Approach:

Development of the Methodology for Glacial Lake Outburst Flood Risk Assessment

Objective: To reduce the risk of glacial lake outburst flood in the Hindu Kush Himalaya (HKH) region

Expected Outcome: The methodology developed by ICIMOD is used by the national disaster management authorities of the HKH countries to conduct comprehensive GLOF risk assessment and to plan risk mitigation measures

Input provided by: Arun B. Shrestha, ICIMOD

Main elements of the implementation strategy

1. Development of step-wise risk assessment method (Figure 1)
2. Conduct detailed field study of three potentially dangerous glacial lakes
3. Pilot the assessment (case studies) for three potentially dangerous glacial lakes
4. Communicate the findings with stakeholders: communities at risk, district administrations, central level administrations, policy and decision makers
5. Packaging of the methodology and the findings of the case studies
6. Outreach activities

Targeted beneficiaries

1. Communities living downstream of the potentially dangerous lakes
2. Disaster management authorities
3. Policy and decision makers
4. Scientific community

Any significant lessons learned

1. Communication strategy should be developed based on the target beneficiaries
2. Communication about risk without possible solutions will not be well received by the communities
3. Multi-stakeholder involvement in the methodology development and conduction case study can lead to better products

Resource requirements

Information/data needs:

1. Detailed geophysical information about the environment surrounding the glacial lake, particularly the lake damming moraine
2. Bathymetric information of the glacial lake
3. Detailed topographic information of the river valley
4. High resolution satellite imageries
5. Detailed socio-economic information of the communities downstream of the glacial lake

Capacity needs:

1. Geophysical investigation
2. Bathymetric survey
3. Topographical survey

4. Dam break modelling
5. Hydrodynamic modelling
6. Socio-economic survey and analysis

Financial resources:

~US$100,000 per lake for risk assessment

Potential for replication or scaling-up

1. Very high potential for replication
2. Some customization needed

Any additional information

A GLOF risk mitigation project has been developed for Pakistan based on the findings of the study. This project intends to use the methodology developed by this study.

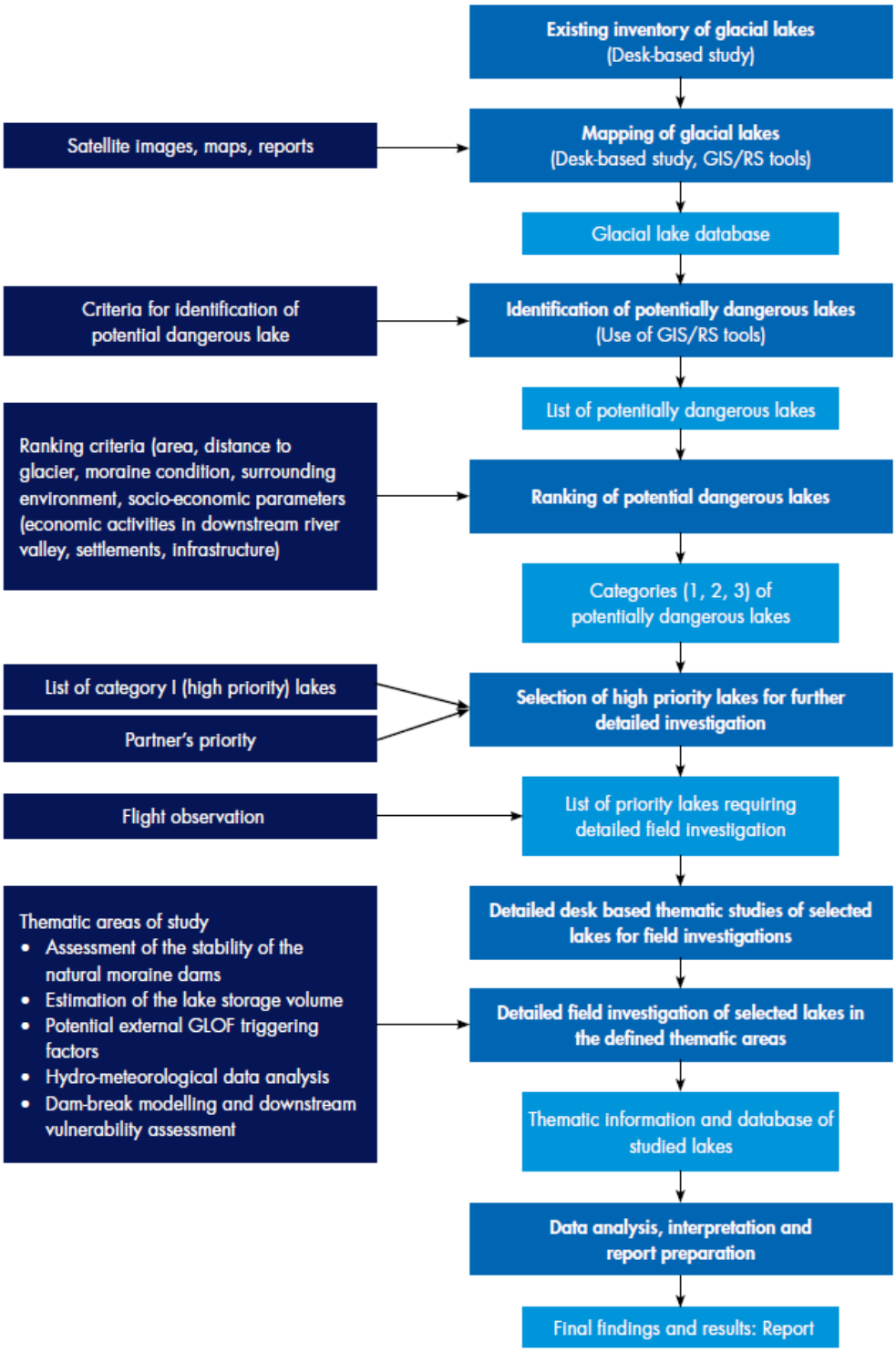

Figure 1: A step-wise methodology for GLOF risk assessment (ICIMOD, 2011)