

Shelter

Sustainable Historic Environments
hoListic reconstruction through
Technological Enhancement &
community-based Resilience



**Extract of D4.2 – Strategy for early recovery roadmap
Sava River Basin Roadmap**

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Glossary

Acronym	Full name
BBB	Build Back Better
CA	Consortium Agreement
CCA	Climate Change Adaptation
CH	Cultural Heritage
CNH	Cultural and Natural Heritage
CNHM	Cultural and Natural Heritage Management
DRR	Disaster Risk Reduction
DRM	Disaster Risk Management
DoA	Description of Action
HA	Historic Area
LDRM	Local Disaster Recovery Manager
EC	European Commission
EOP	Emergency Operations Plan
NH	Natural Heritage
OL	Open Lab
PDRP	Pre-Disaster Recovery Plan/Planning
PDRR	Pre-Disaster Recovery Roadmap
PRT	Planning Resilience Team
SP	Spatial Planning
WHL	UNESCO World Heritage List
WP	Work Package

1 Applying the SHELTER Pre-Disaster Recovery Roadmap methodology to the five Open Labs

The SHELTER Pre-Disaster Recovery Roadmap (PDRR) methodology is tested and applied to each OLs. Five tailored early recovery Roadmaps have been drafted, taking into account: i) the activities the case studies have already performed prior to or regardless of SHELTER project. The inputs that OLs provided to other Tasks (e.g., the policy instruments already in place mapped in Task 4.2) during the project implementation were used; ii) the outputs and outcomes generated so far from the project.

The main purpose of this activity has been to understand which steps of the Roadmap have been already completed and what else should be done by OLs to build their own early recovery Roadmap. To achieve that, the following process has been applied:

- UNIBO drafted the five tailored Roadmaps based on the information gathered from the outputs and outcomes generated so far from the project and the inputs that OLs provided to other Tasks. Miro¹ has been used as a collaborative tool to show the Roadmap and to collect feedback from OLs.
- bilateral remote meetings have been scheduled in early May 2022 with each OL, involving OL coordinators and OL technical partners. During these meetings, the colleagues involved were asked to provide their feedback and comments on the PDRR, to check the activities foreseen by the Roadmap, the checklist and the five phases in detail. Each OL coordinator and OL technical partner were also asked to double-check if they agreed on the inputs coming from SHELTER Tasks and to inform about other possible inputs not considered yet, to better understand which activities have been completed by the OL and which are still to be implemented;
- UNIBO finalized the changes and comments provided by OLs.

1.1 Sava River Basin Open Lab

The Sava River Basin OL is a cross-border OL, that involves several countries in the South-Eastern Europe: the Republic of Albania, Bosnia and Herzegovina, the Republic of Croatia, Montenegro, the Republic of Serbia and the Republic of Slovenia. For this territory, flooding has been identified as the main hazard, and climate change has been considered as an amplifying phenomenon.

¹ Miro | Online Whiteboard for Visual Collaboration, available at: <https://miro.com/>

1.1.1 PHASE 1 – GETTING STARTED: Form a Collaborative Planning Resilience Team

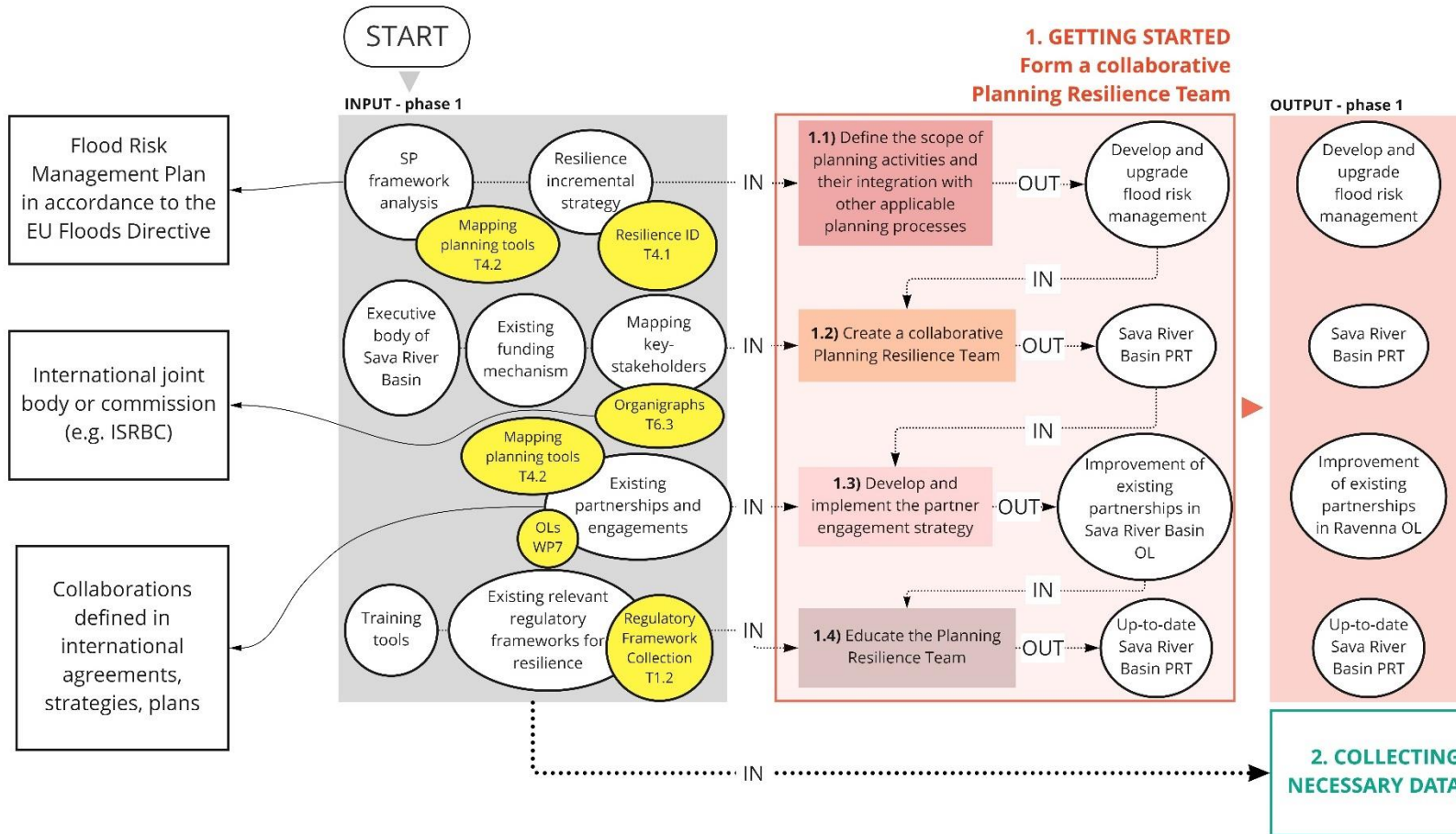


Figure 1. Phase 1 for Sava River Basin OL

Activity 1.1 - Define the scope of planning activities and their integration with other applicable planning processes (Figure 90)

In order to better delineate the general scope of the PDRP activities, existing recovery, mitigation and adaptation plans and strategies have to be considered.

The most relevant reference among planning tools, already collected in Task 4.2 *Definition of protocols, plans and guidelines for CCA/DRM and integration within planning policies*, is the *Flood Risk Management Plan in the Sava River Basin*. It establishes joint objectives of flood risk management in compliance with principles of long-term sustainability, identifies non-structural and structural measures in areas of mutual interest, and enables a consistent and coordinated approach to managing these risks at the level of the entire Sava River Basin in accordance to the EU Floods Directive.

It can be defined that the scope of the PDRP for Sava River Basin OL is to develop and upgrade flood risk management.

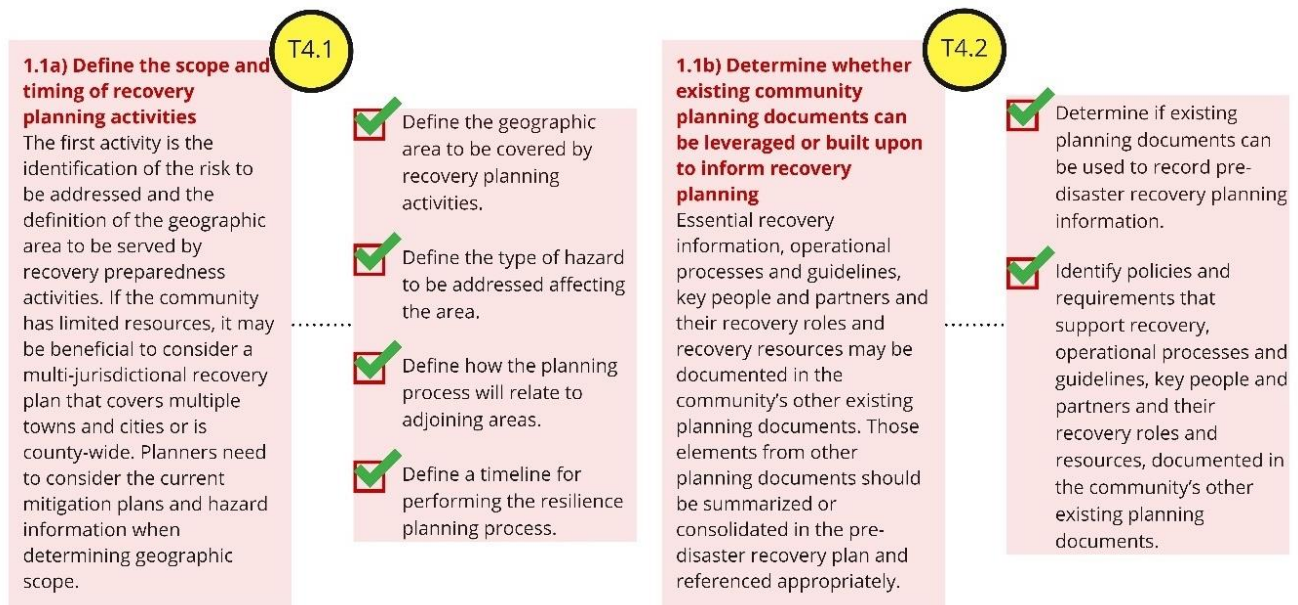


Figure 2. Key-activity 1.1 for Sava River Basin OL

Activity 1.2 - Create a collaborative Planning Resilience Team (Figure 91)

According to the PDRR, the PRT should be formed by experts with various skills and representatives of the whole community.

The executive body of the International Sava River Basin Commission can be considered as the starting point to form the team which leads the recovery planning process. In this activity, the Organigraph developed in Task 6.3 is the most helpful tool to explore potential partners, collaboration, and governance mechanisms that operate the international spatial scale, especially those which deal with the risk of flooding.

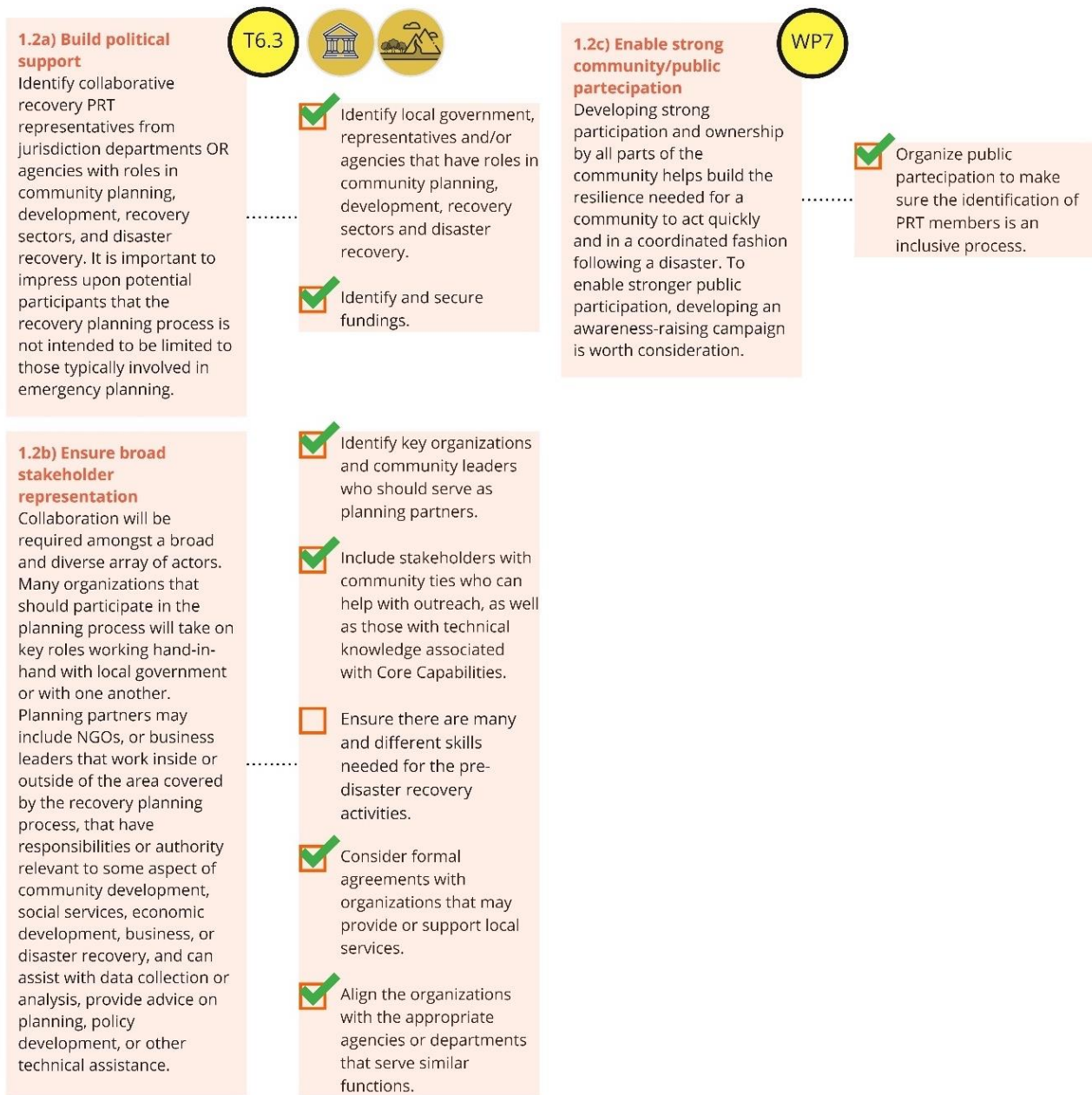


Figure 3. Key-activity 1.2 for Sava River Basin OL

Activity 1.3 – Develop and implement the partner engagement strategy (Figure 92)

To evaluate continually additional stakeholders and new partners to be included as needed throughout the planning process, it is possible to consider the collaborations defined in international agreements, strategies, and plans.

The development and implementation of these planning tools foresaw collaborative processes, including experts from all countries of the Framework Agreement in the Sava River Basin.

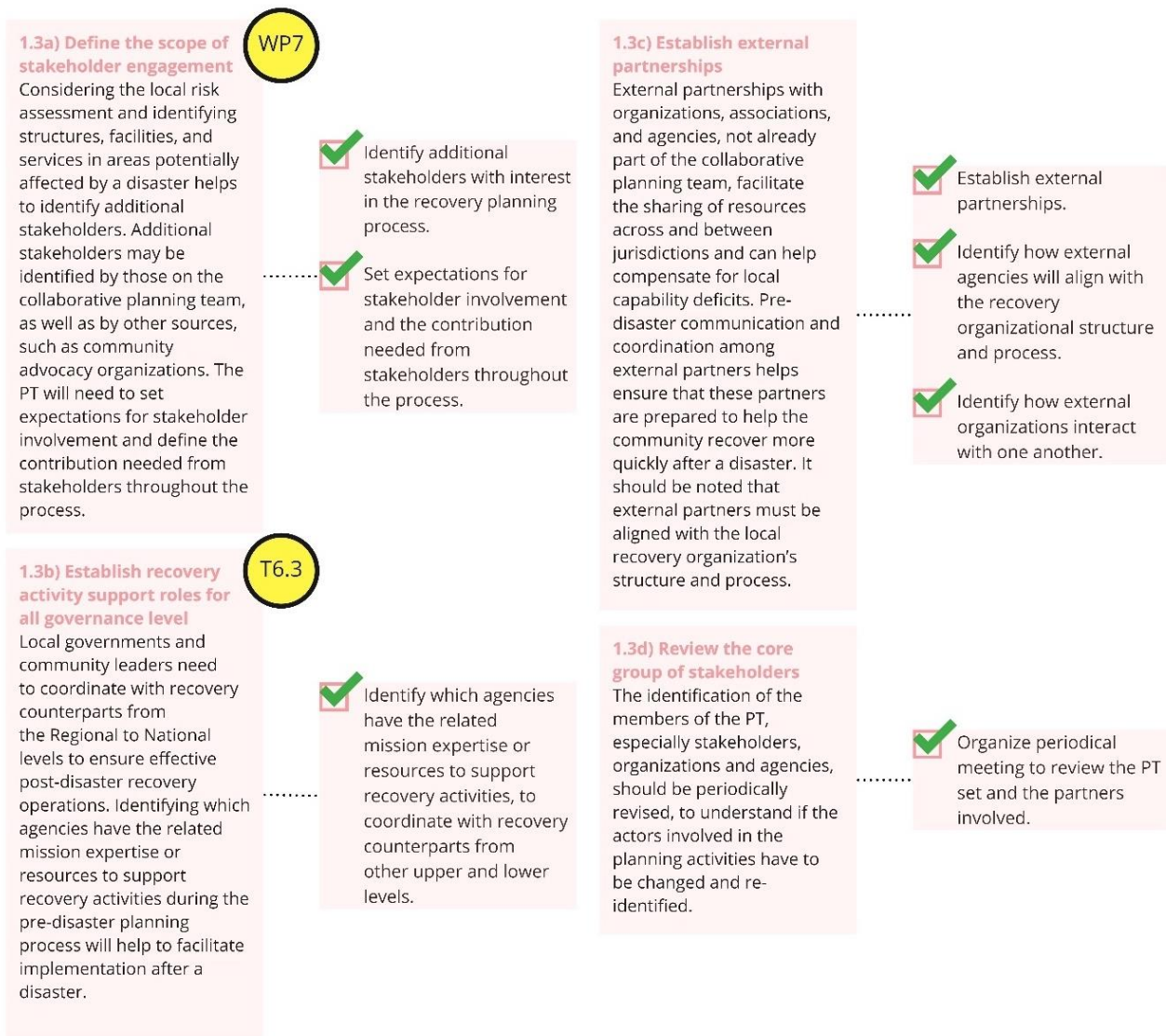


Figure 4. Key-activity 1.3 for Sava River Basin OL

Activity 1.4 – Educate the Planning Resilience Team (Figure 93)

Regarding the first phase, the Sava River Basin OL has a well-defined team, in terms of planning resilience: there is a solid network of the interested stakeholders and citizens, and it has also established a Task expert Group for the SHELTER project implementation which is formed of the core experts of the Open Lab stakeholders group (cultural heritage authorities, flood management authorities and emergency responders/civil protection authorities) and officially nominated by the representatives in the Sava Commission and the responsible ministry from Montenegro, as well as the officials of the Sava Commission Secretariat. The representatives of the Member countries in the International Sava River Basin Commission regularly evaluate the work of the Task Group.

However, the most relevant challenge is to involve more agencies with cultural heritage expertise, to take more into account this key topic. In fact, those experts involved in this

planning process recognize as a gap that the team does not involve partners and authorities or experts in cultural protection and management sectors.



Figure 5. Key-activity 1.4 for Sava River Basin OL

1.1.2 PHASE 2 – COLLECTING NECESSARY DATA: Understand the situation

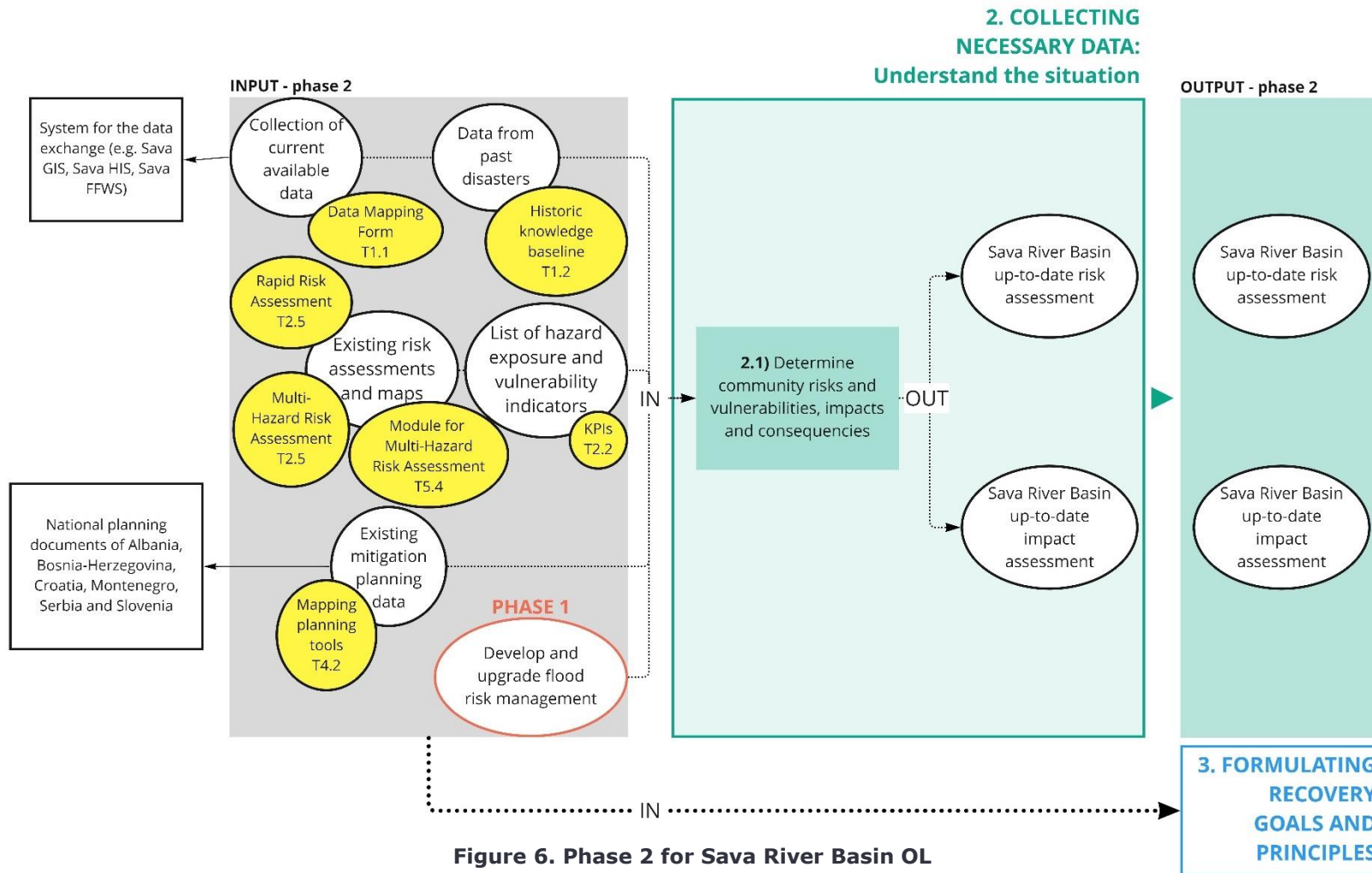


Figure 6. Phase 2 for Sava River Basin OL

Activity 2.1 - Determine community risks and vulnerabilities, impacts and consequences (Figure 95)

Many different instruments to obtain specific disaster risk information are available for the Sava River Basin OL.

From SHELTER, the available inputs are:

- Data Mapping Form, which collects all current available data
- Historic knowledge baseline, to be informed about past events' impacts
- Multi-Hazard Risk Assessment
- Rapid Risk Assessment
- Set of KPIs, as hazard exposure and vulnerability indicators

The PRT can also use such systems for data exchange as Hydrological Information System of the International Sava River Basin Commission (Sava HIS), Sava Flood Forecasting and Warning System (Sava FFWS) and Sava GIS Geoportal.

Furthermore, it is possible to refer to national planning documents from the countries involved in the Sava River Basin, which provide risk assessments, data on threats and hazards, overviews of vulnerabilities of communities and impacts and consequences they have to address.

Examples of existing documents to review and consider in this phase include:

- Emergency plans
- Mitigation and adaptation plans
- Protection and rescue plans
- Guidances for making vulnerability and risk assessments

Regarding the second phase, the Sava River Basin OL has many available data, to gather information about hazards, risks and vulnerabilities to address in its territory. However, while hazard is identified, the assessment of risk is a very challenging task still ongoing within the SHELTER project.

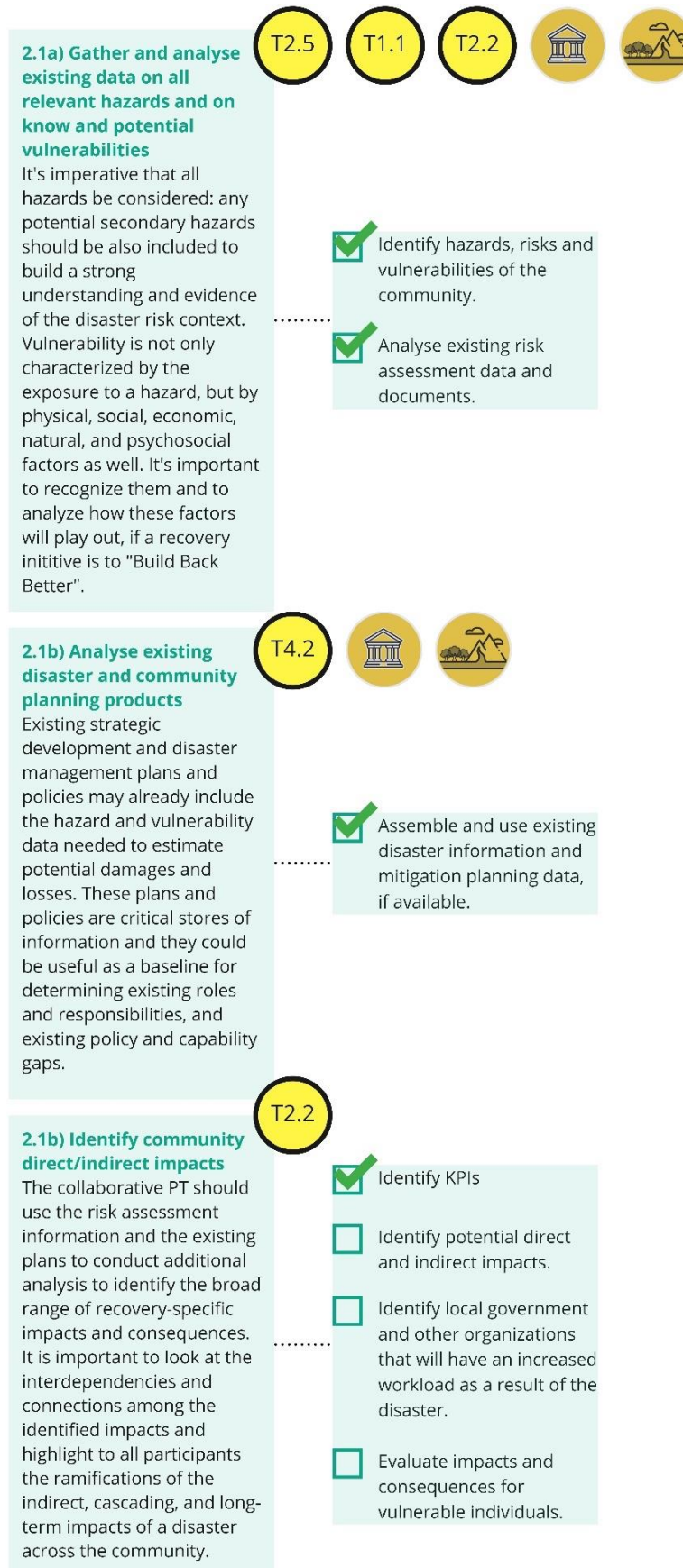


Figure 7. Key-activity 2.1 for Sava River Basin OL

1.1.3 PHASE 3 – FORMULATING RECOVERY GOALS AND PRINCIPLES

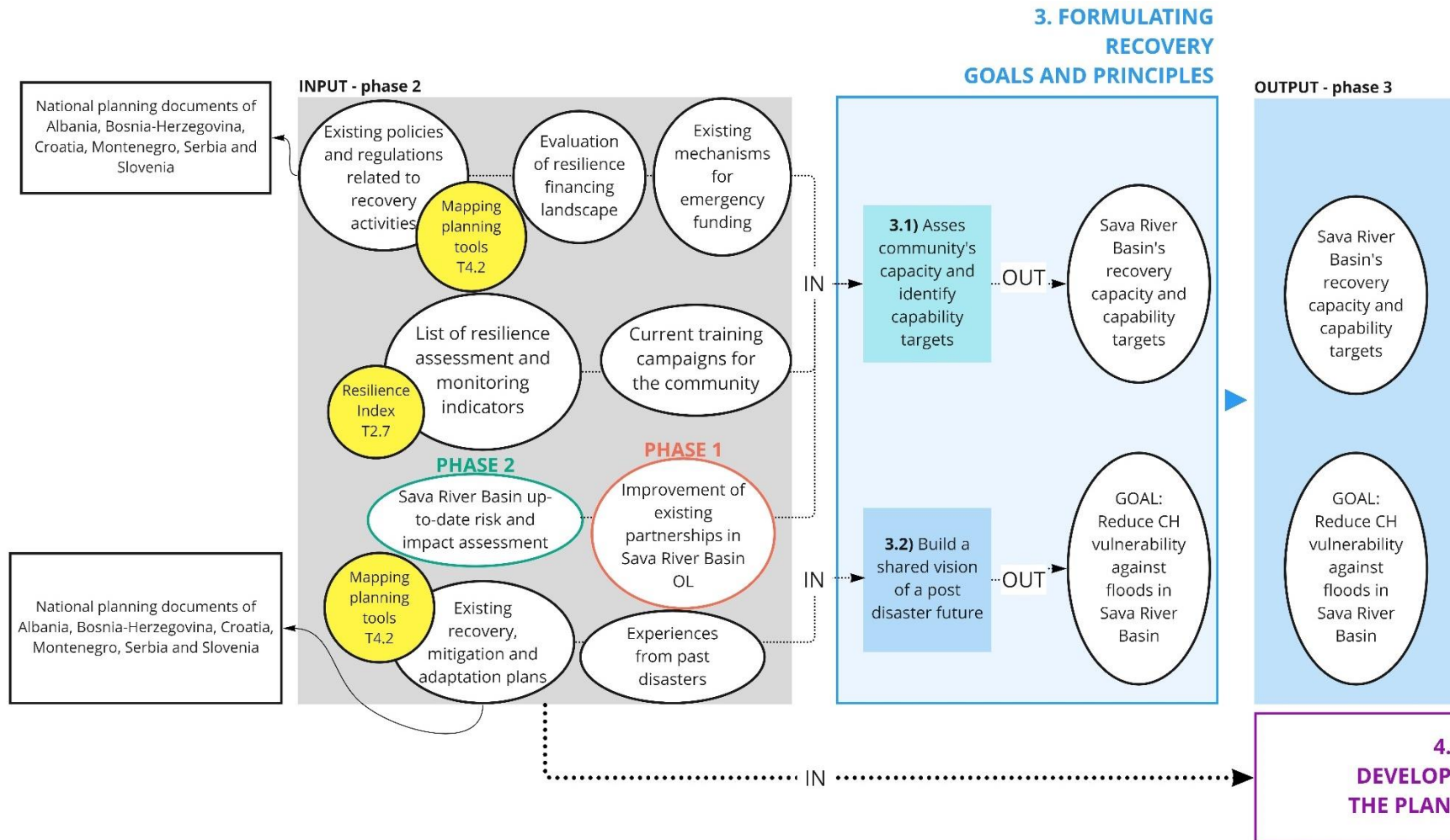


Figure 8. Phase 3 for Sava River Basin OL

Activity 3.1 – Assess community's capacity and identify capability targets (Figure 97)

Based on the risk assessment of the previous phase, this activity is to evaluate the strengths and weaknesses of existing DRM operations and organizations.

First of all, it is possible to take relevant information from some planning tools collected in Task 4.2, related to recovery activities. In Sava River Basin OL, the main references are all the national planning tools, such as:

- Emergency plans
- Flood risk management plans
- Flood defense plans
- Strategies on CCA

From SHELTER, the available input is:

- Resilience Index, that provides a list of resilience assessment and monitoring indicators

In this step, it is relevant to take into account all the previous assessments, regarding threats, risks and impacts that the community should address. Also, the partner engagement strategy, developed in phase 1, is helpful to evaluate staffing resource, in terms of quantity and expertise, and the financial resources available, identifying potential community needs and gaps.

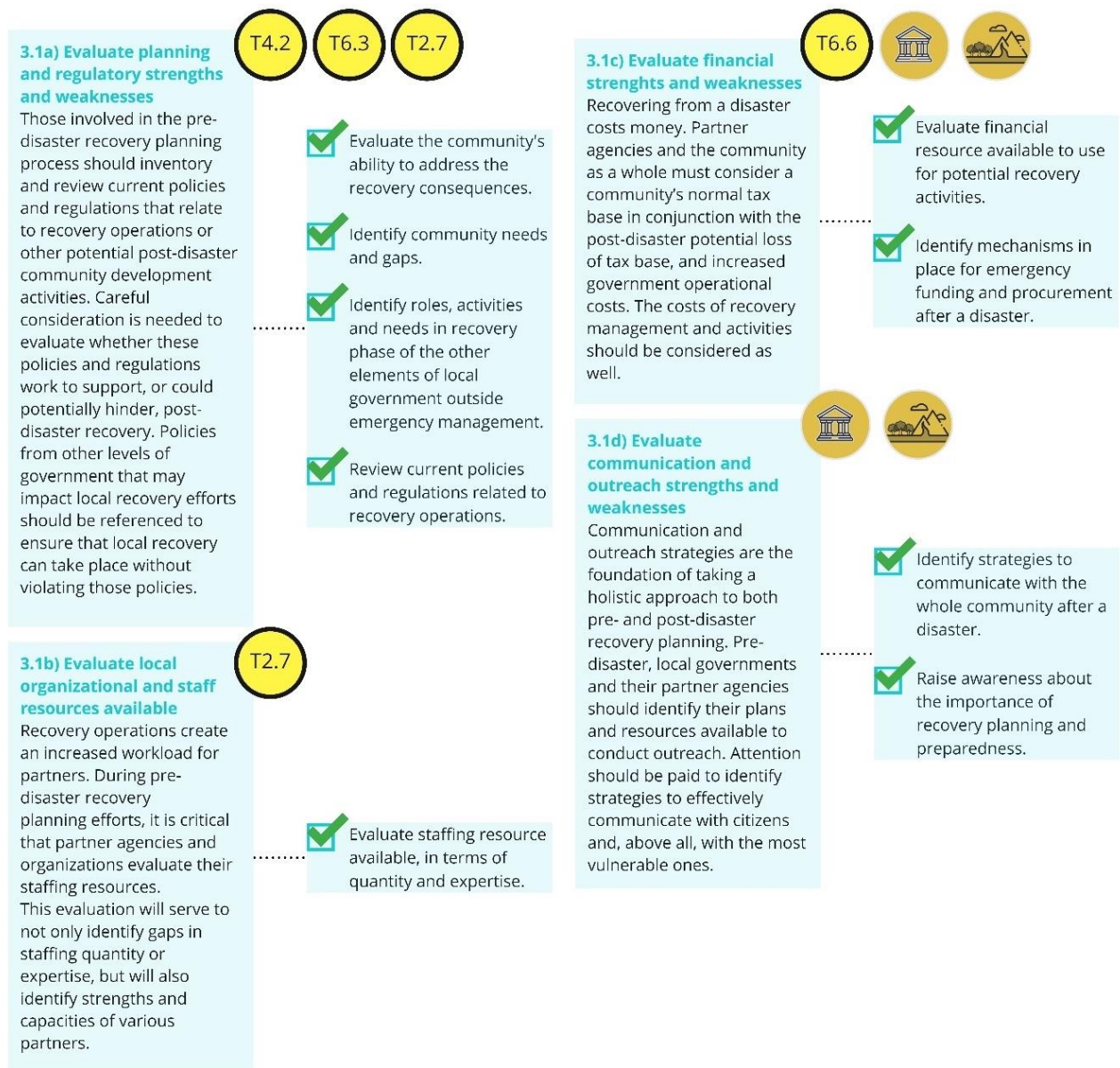


Figure 9. Key-activity 3.1 for Sava River Basin OL

Activity 3.2 – Build a shared vision of a post disaster future (Figure 98)

The main potential recovery goal for Sava River Basin OL could be:

- Reduce CH vulnerability against floods in the Sava River Basin

This goal coincides with the overall aims and the objectives of many planning tools of countries involved in the OL, regarding DRM, CCA, protection and rescue in emergency situations.

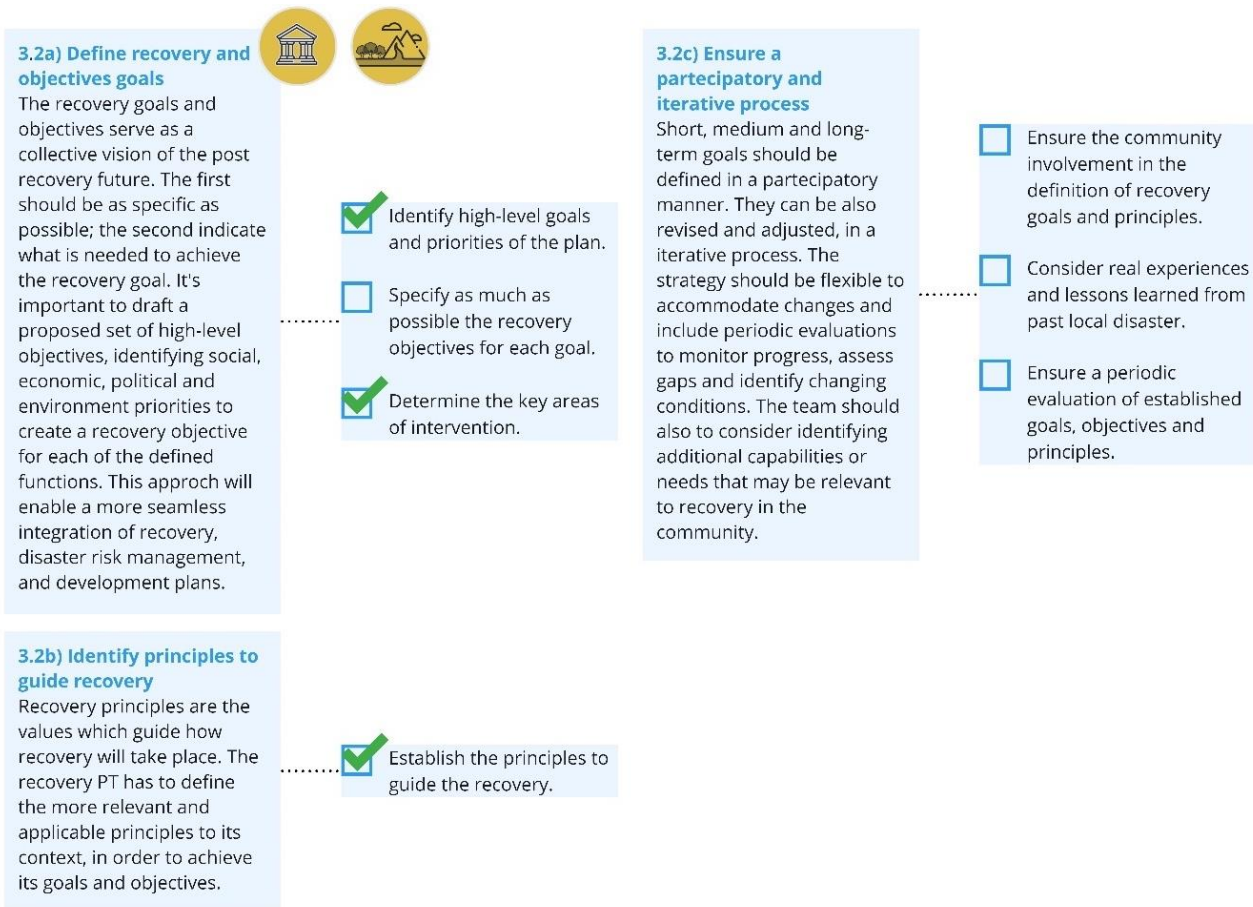
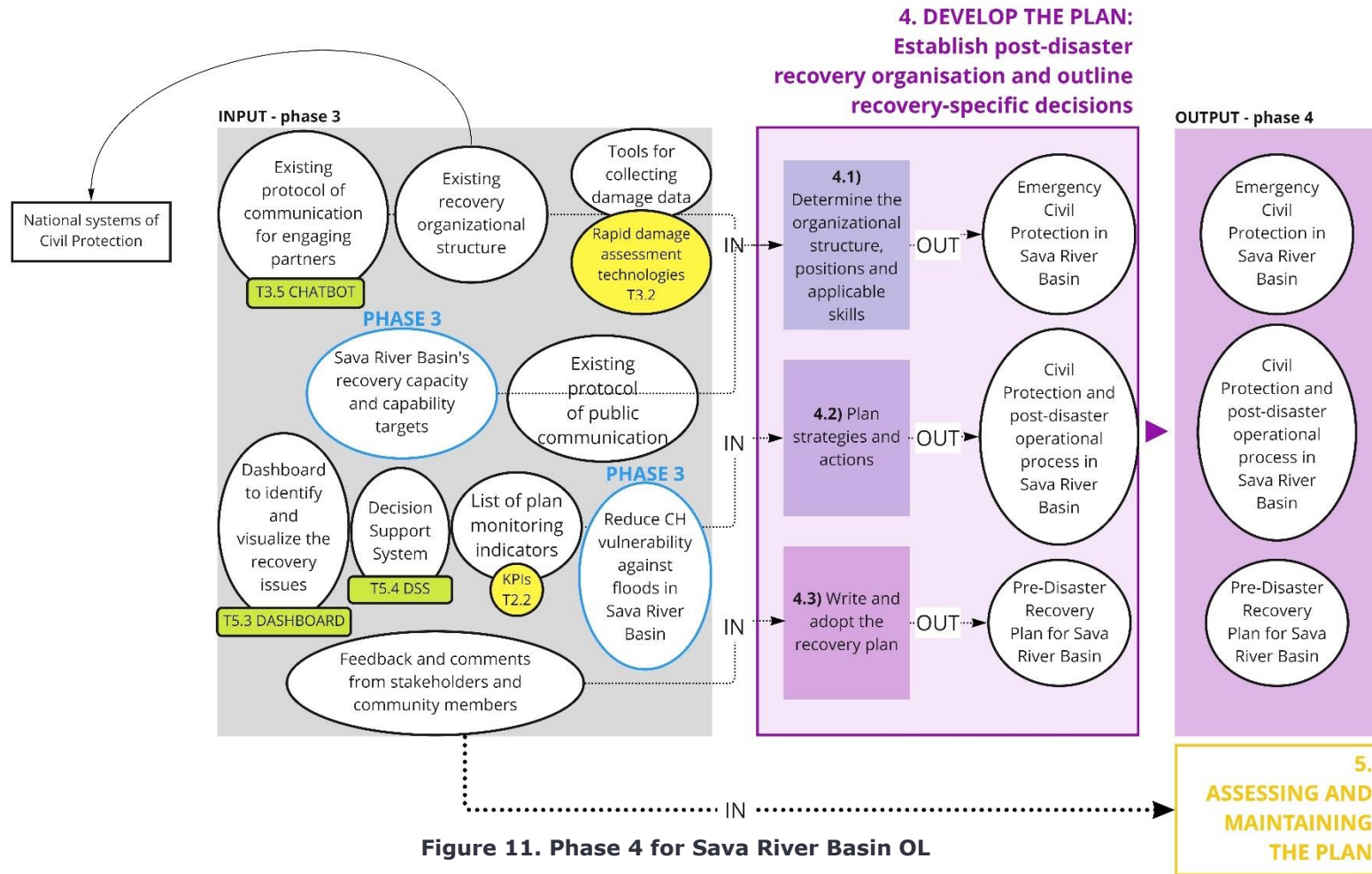


Figure 10. Key-activity 3.2 for Sava River Basin OL

Regarding the third phase, in the Sava River Basin OL the identification of community needs and gaps are very well-covered, by virtue of national tools.

The recovery goals and objectives are well defined, but it is relevant to notice that they are established at a very high and strategic level in the recovery, mitigation and adaptation plans at the national level, for each country involved in the Sava River Basin.

1.1.4 PHASE 4 – DEVELOP THE PLAN: Establish post-disaster recovery organisation and outline recovery-specific decisions



Activity 4.1 – Determine the organizational structure, positions and applicable skills (Figure 100)

Stakeholders and experts involved in the planning process should start by evaluating the existing recovery organization. Each country of the Sava River Basin has its national Civil Protection Organization, with a clear and well-defined structure.



Figure 12. Key-activity 4.1 for Sava River Basin OL

Activity 4.2 – Plan strategies and actions (Figure 101)

Considering the content of the existing recovery, mitigation and adaptation plans in countries of the Sava River Basin, it is possible to assert that in this OL strategies and actions to address recovery issues, both before and after a disaster, are already defined.

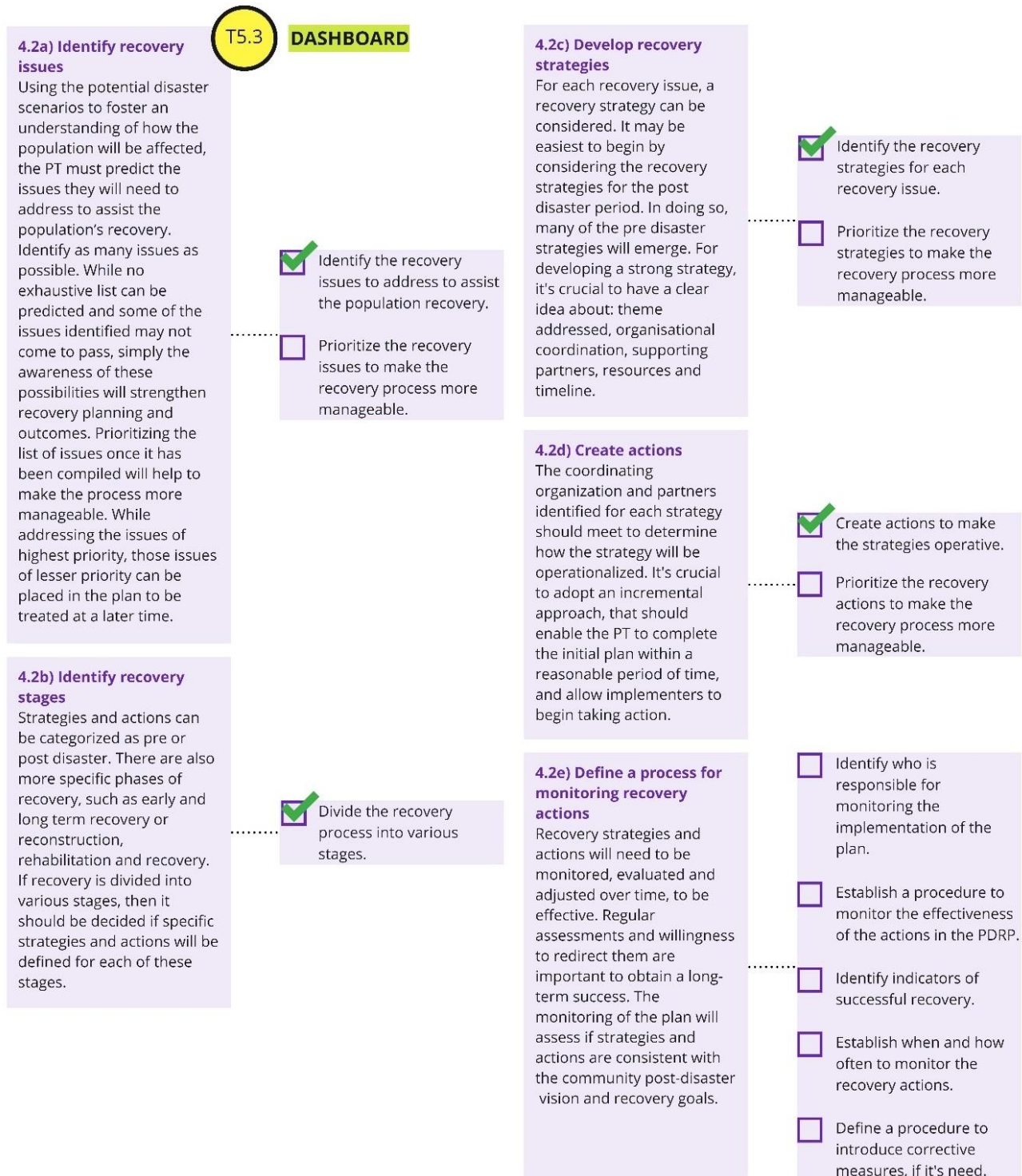


Figure 13. Key-activity 4.2 for Sava River Basin OL

Activity 4.3 – Write and adopt the recovery plan (Figure 102)

If the community needs to develop a new PDRP, all information, documentations and decisions made in the previous phases have to be gathered to form a new written plan.

When the plan is adopted, the community is invited to review and provide feedback before the final approval of the document. After an appropriate period of time to allow feedback, planners need to hold hearings to assess all observations from the community and modify the PDRP, if necessary. Once the plan has been corrected, there is the final approval phase of the planning process and the consequently release.

As mentioned above, the public participatory of documents is mandatory, even if the community does not participate in co-design processes.

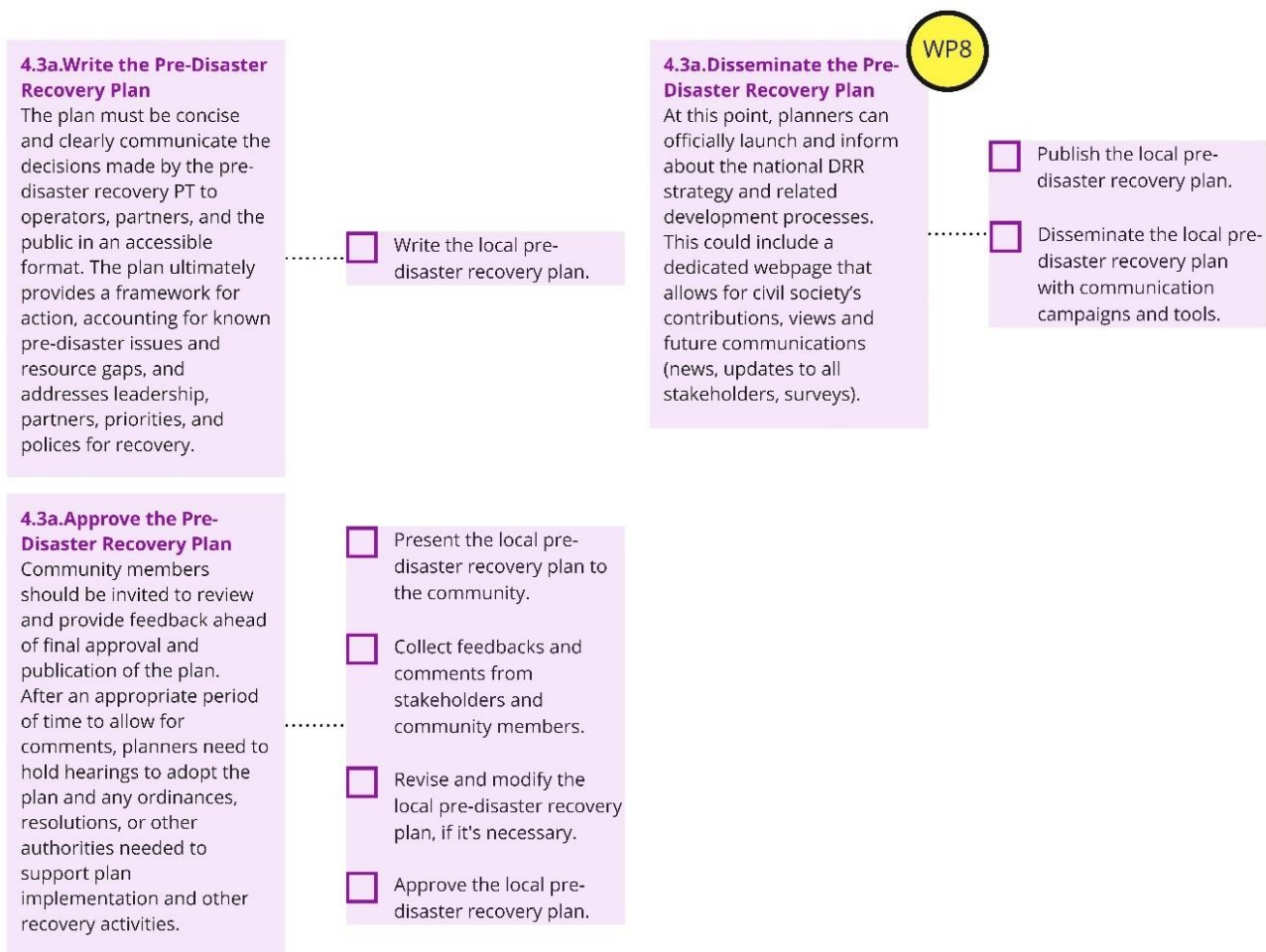


Figure 14. Key-activity 4.3 for Sava River Basin OL

Regarding the fourth phase, in the Sava River Basin OL, all countries have already established their emergency and recovery management: many steps in the prevention phase of DRM are already done, thanks to national procedures.

1.1.5 PHASE 5 –ASSESSING AND MAINTAINING THE PLAN: review and update

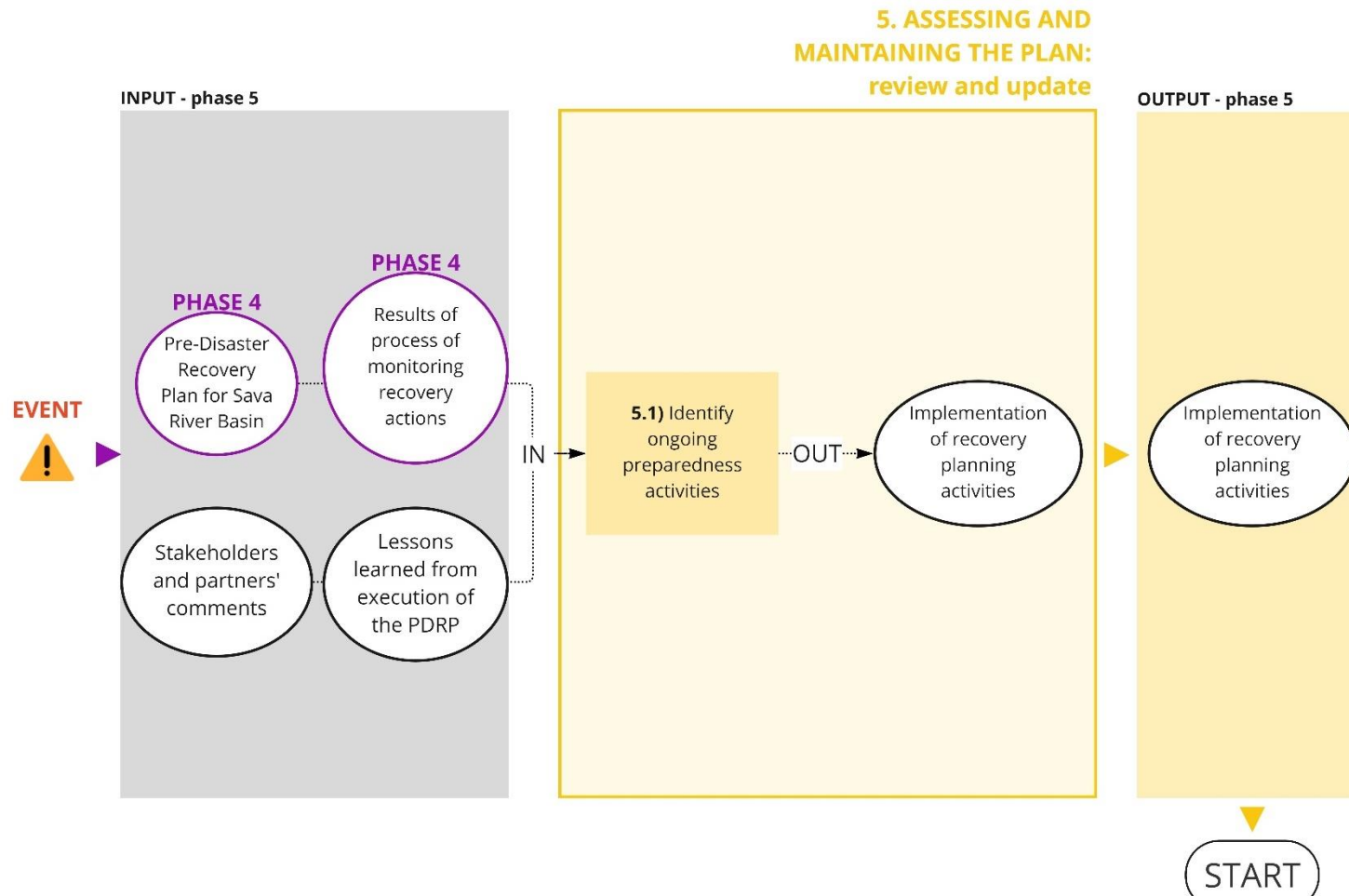


Figure 15. Phase 5 for Sava River Basin OL

Activity 5.1 – Identify ongoing preparedness activities (Figure 104)

Phase 5 is made to encourage planners to identify training and exercise opportunities, and to establish a schedule for revision and review of plans. Reviews and revisions of PDRPs are based on real-world events, such as wildfires, exercise experiences or lessons learned by other jurisdictions.

Ongoing activities ensure that recovery stakeholders are able to effectively manage post-disaster recovery activities (FEMA, 2016).

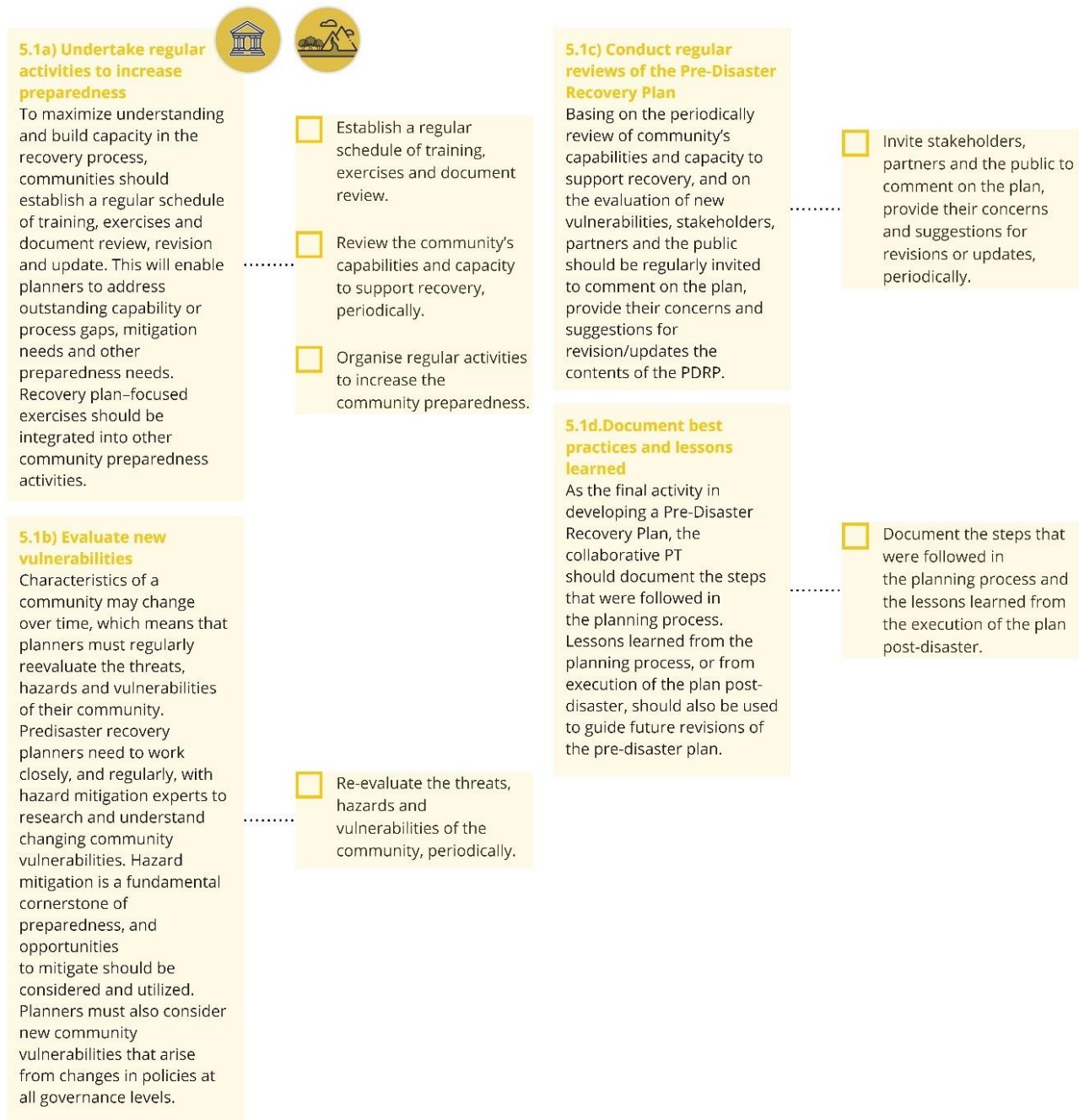


Figure 16. Key-activity 5.1 for Sava River Basin OL

Another important ongoing preparedness activity is the regular evaluation and review of the PDRP, policy documents and ordinances, because capabilities, threats, hazards, and vulnerabilities of the community may gradually change over time and a plan update can be necessary. Changes in the PDRP may also be done to comply with new governments' regulations and laws. Furthermore, lessons learned from execution of the plan in a post-disaster phase should be documented to guide future revisions of the plan.

1.1.6 Summary of the Early Recovery Roadmap for Sava River Basin OL

Figure 105 shows the progress of Sava River Basin OL for each phase of the PDRR, through a qualitative indicator in the form of a loading bar.

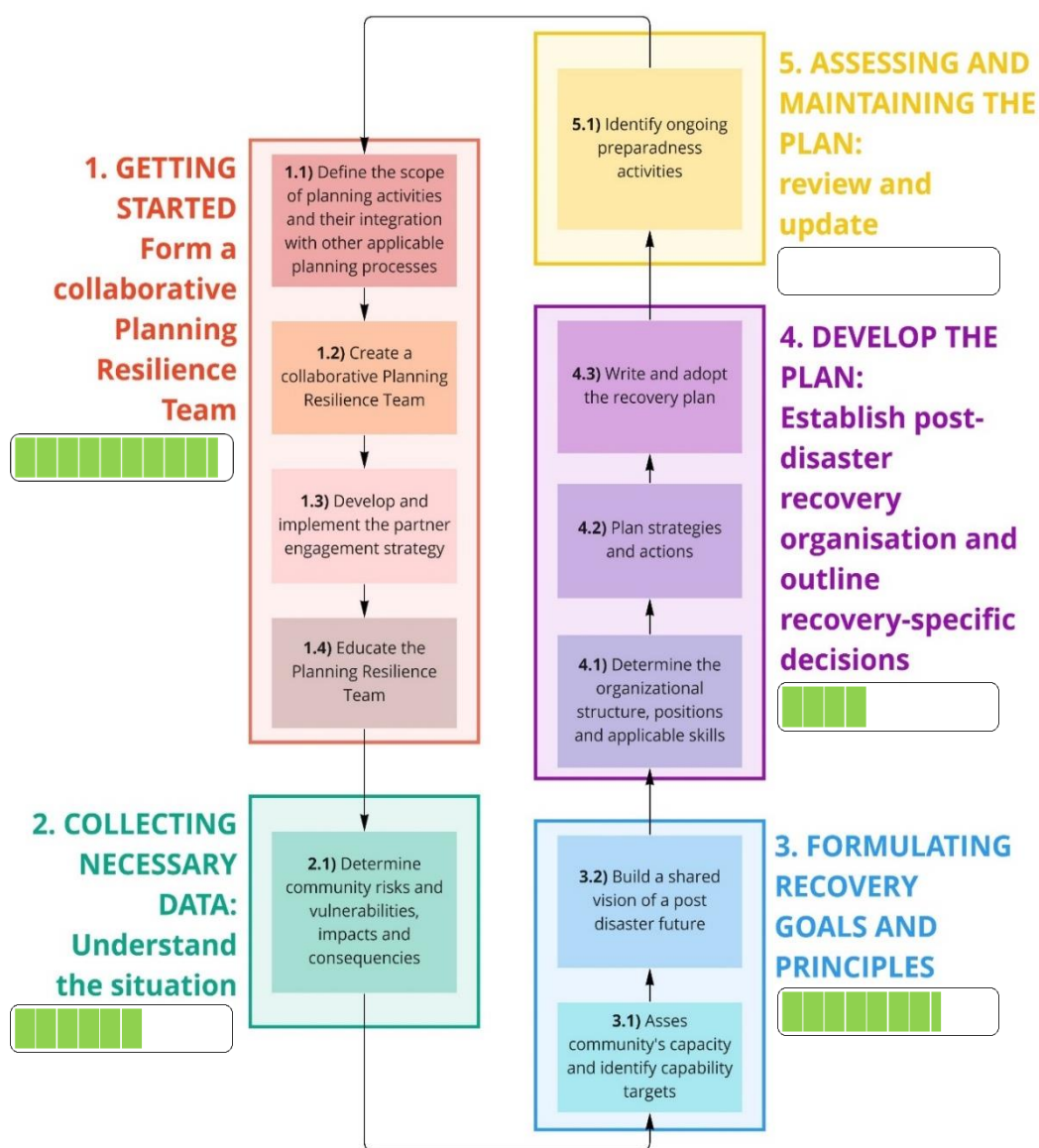


Figure 17. Progress in the PDRR for Sava River Basin OL

In addition, the following summary list (Table 25) is helpful to identify which activities are already done and which not, to highlight the complete aspects and the pending ones in the process of PDRP for Sava River Basin OL.

PHASE 1	
complete sub-activities	<ul style="list-style-type: none"> 1.1a) Define the scope and timing of recovery planning activities 1.1b) Determine whether existing community planning documents can be leveraged or 1.2a) Build political support 1.2b) Ensure broad stakeholder representation 1.2c) Enable strong community/public participation 1.3a) Define the scope of stakeholder engagement 1.3b) Establish recovery activity support roles for all governance level 1.3c) Establish external partnerships 1.3d) Review the core group of stakeholders 1.4a) Begin with shared understanding of Pre-Disaster Recovery Planning 1.4b) Define a recognizable structures and terminology
pending sub-activity	Ensure there are many and different skills needed for the pre-disaster recovery activities in sub-activity 1.2b
PHASE 2	
complete sub-activities	<ul style="list-style-type: none"> 2.1a) Gather and analyse existing data on all relevant hazards and on know and potential vulnerabilities 2.1b) Analyse existing disaster and community planning products 2.1c) Identify community direct/indirect impacts
pending sub-activity	<ul style="list-style-type: none"> Identify potential direct and indirect impacts in sub-activity 2.1c Identify local government and other organizations that will have an increased workload as a result of the disaster in sub-activity 2.1c Evaluate impacts and consequences for vulnerable individuals in sub-activity 2.1c
PHASE 3	
complete sub-activities	<ul style="list-style-type: none"> 3.1a) Evaluate planning and regulatory strengths and weaknesses 3.1b) Evaluate local organizational and staff resources available 3.1c) Evaluate financial strengths and weaknesses 3.1d) Evaluate communication and outreach strengths and weaknesses 3.2a) Define recovery and objectives goals 3.2b) Identify principles to guide recovery
pending sub-activity	<ul style="list-style-type: none"> Specify as much as possible the recovery objectives for each goal in sub-activity 3.2a 3.2c) Ensure a participatory and iterative process
PHASE 4	
complete sub-activities	<ul style="list-style-type: none"> 4.1a) Establish an organizational structure 4.1b) Ensure recovery resource identification, management and coordination 4.1c) Develop a process for notifying and engaging recovery partners in preparation for or immediately after a disaster 4.1d) Prepare a process for gathering damage information and assessing impacts to evaluate and support recovery activities through the long-term 4.1e) Develop guidelines for recovery-related public communications 4.2a) Identify recovery issues 4.2b) Identify recovery stages 4.2c) Develop recovery strategies 4.2d) Create actions
pending sub-activity	<ul style="list-style-type: none"> Identify the LDRM in sub-activity 4.1a Form sub-groups of work in sub-activity 4.1a Identify a coordinator for each specific sub-group in sub-activity 4.1a

	<p>Prioritize the recovery issues to make the recovery process more manageable in sub-activity 4.2a</p> <p>Prioritize the recovery strategies to make the recovery process more manageable in sub-activity 4.2c</p> <p>Prioritize the recovery actions to make the recovery process more manageable in sub-activity 4.2d</p> <p>4.2e) Define a process for monitoring recovery actions</p> <p>4.3a) Write the Pre-Disaster Recovery Plan</p> <p>4.3b) Approve the Pre-Disaster Recovery Plan</p> <p>4.3c) Disseminate the Pre-Disaster Recovery Plan</p>
PHASE 5	
complete sub-activities	-
pending sub-activity	<p>5.1a) Undertake regular activities to increase preparedness</p> <p>5.1b) Evaluate new vulnerabilities</p> <p>5.1c) Conduct regular reviews of the Pre-Disaster Recovery Plan</p> <p>5.1d) Document best practices and lessons learned</p>

Table 1. Completed/pending activities for Sava River Basin OL

As already explained, Sava River Basin OL is a cross-border case study involving several countries in the Balkan area. Therefore, the completion of steps, activities and sub-activities have been taken into account from the cross-border perspective whenever applicable. To summarise, the application of the early recovery Roadmap to the Sava River Basin OL has shown that 2 out of 5 phases (i.e. phase 1 and 3) have been already almost finalized, while the others show different degrees of completion. Although Sava River Basin OL has not already in place a cross-border PDRP, all countries part of the OL have already established their emergency and recovery management plan: many steps in the prevention phase of DRM are already done, thanks to national procedures.