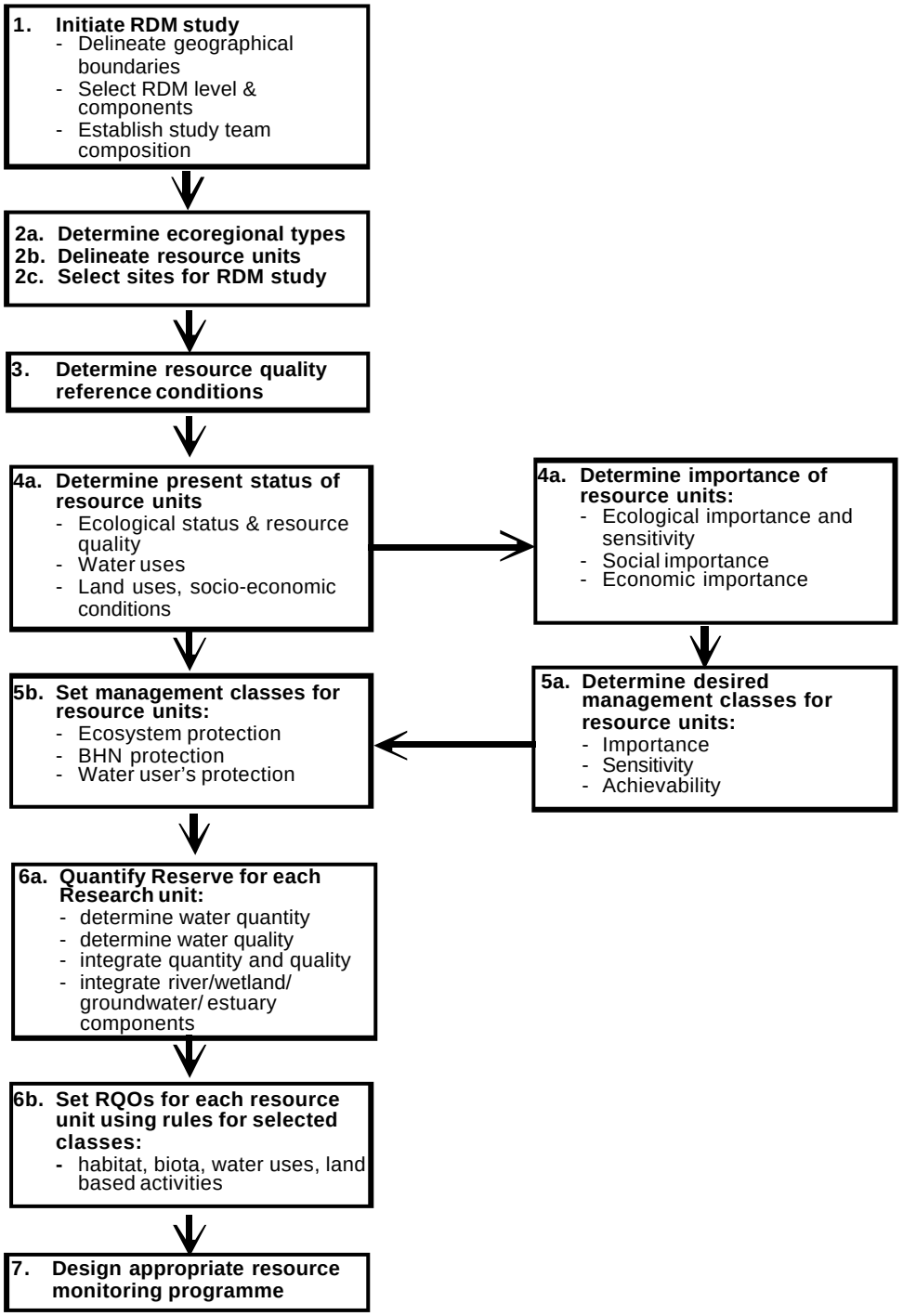
2. PROCESS OF ECOLOGICAL RESERVE DETERMINATION

2.1 EXISTING RDM PROCEDURE

The existing RDM process is described in 7 steps as follows:

Fig 2.1 Existing generic RDM 1999 procedure



The seven steps above were applied for all the components and were applied successfully. Some shortcomings did however become evident as follows:

- **The steps, provided only in the context of RDM, did not necessarily fit into the overall procedures required for Reserve determination (from definition to implementation).**
- **The procedure made reference to management classes which were incorrect as it should make reference to the ECOLOGICAL component of the Management Class only. The Management Class forms part of the classification procedure which has not yet been defined. This led to some confusion regarding the links between the Reserve, the ecological component of the Management Class and the classification process itself.**
- **The procedure has to be contextualised within the broader process that illustrates how it links to operation and implementation. Without these links, credibility of the recommended processes comes into question.**
- **Steps 6b and 7 were problematic as they could not directly follow on from step 6a as indicated by Fig 2.1. Resource Quality Objectives (RQO) and monitoring are linked to the final determined Management Class which comprises a separate process.**
- **The process does not cater for a range of Ecological Reserve scenarios to be assessed. It also does not include any evaluation of other suggested scenarios which could achieve the same objectives as a recommended Ecological Reserve while meeting more of the user's requirements.**

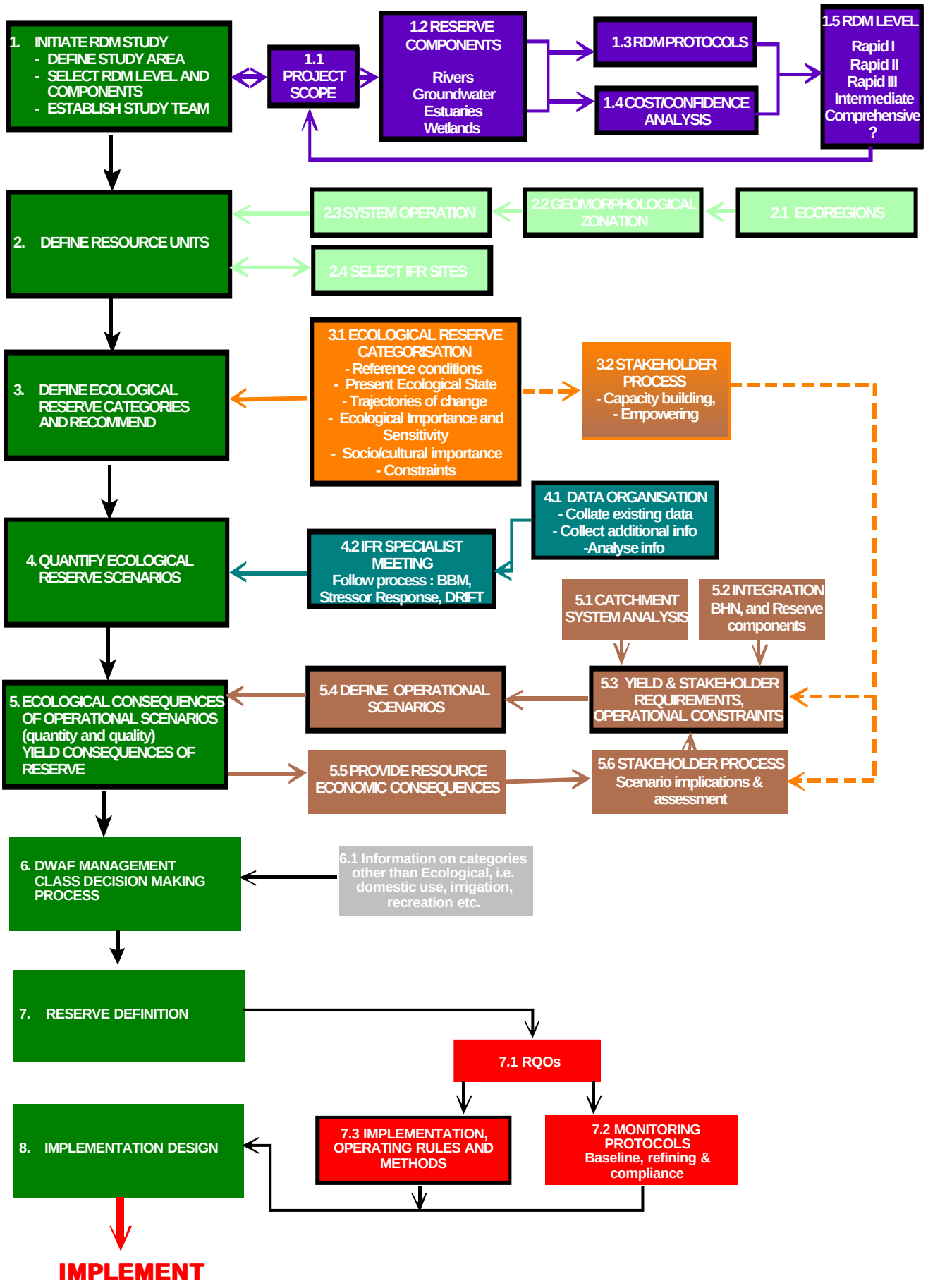
2.2 REVISED ECOLOGICAL RESERVE DETERMINATION PROCESS

The 1999 process was applied during numerous Reserve projects at various levels during the past 2 years. Experience gained resulted in a revised process illustrated in Fig 2.2. The revised process addresses the problems listed above by providing a more integrated process which also shows the POSSIBLE links to issues such as the stakeholder process, classification, implementation and operation. These possible links must be seen only as suggested ways to integrate the Reserve determination process. The blocks in the flow diagrams which are NOT outlined in black are those that are NOT dealt within this report.

It must be noted that all the steps that formed part of the 1999 RDM process are included as part of the revised process.

Note that any reference to the flow diagram in the rest of the document will be made by referring to the numbers in the flow diagrams in brackets and using italics and bold.

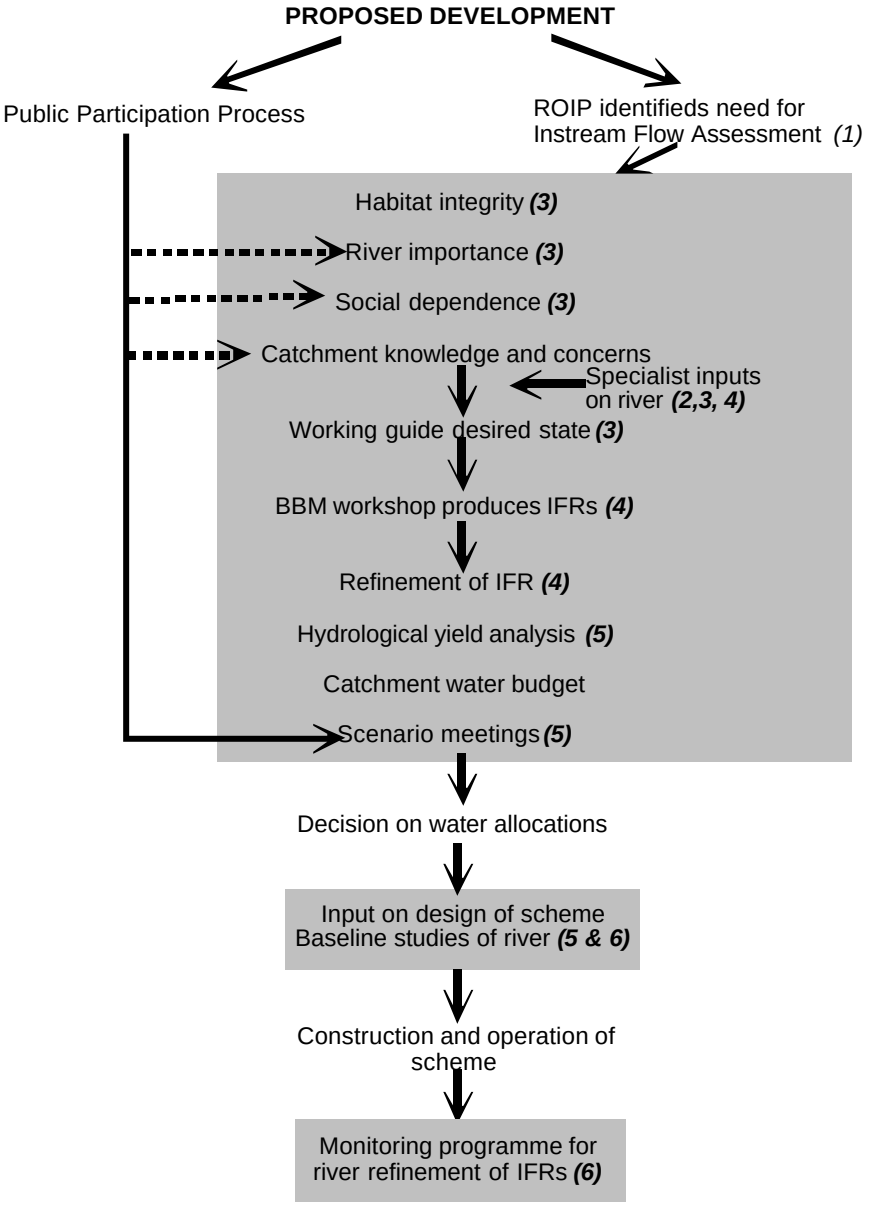
Fig 2.2 : REVISED ECOLOGICAL RESERVE PROCEDURE



2.3 RELATIONSHIP BETWEEN THE BUILDING BLOCK METHODOLOGY AND THE RESERVE DETERMINATION PROCESS

IFRs following the BBM process have been applied since the early 1990s. The process has been continuously developed and has been published in the scientific literature (King and Louw, 1998), as well as in a user manual (King et al., 2000). The BBM process played a major role in devising the Reserve protocols and the steps within the BBM process therefore cover various steps or aspects of those steps in the Reserve determination process ***(2 - 8).*** This is illustrated in the following diagram (Fig 2.3) which provides a summary of the BBM steps (in grey blocks - King & Louw, 1998) with the associated Reserve determination steps (according to 2.2) in brackets.

Fig 2.3 BBM steps illustrating links to the Ecological Reserve determination process



It has become apparent that the process that became known as the BBM covers a much more than the quantification of, and data organisation within, the IFRs. The BBM as published (King and Louw, 1998; King et al., 2000) encompassed a framework of methods including the determination of Habitat Integrity and Ecological Importance and Sensitivity, as well as the assessment of the consequences of different flow scenarios. It is now recognised that these are part of a much more generic IFR process and reference to the BBM should be limited to the actual quantification of the building blocks which represents one way to determine the recommended IFR (step 4 in the Reserve process, Fig. 2.2). Recent developments have suggested modified, or alternative approaches (DRIFT and Flow Stressor-Response (appendix J)) to quantifying the Reserve. However, these alternatives still make use of many of the steps that were originally included as part of the BBM. To avoid future confusion it would be better to refer to the overall framework as the IFR methodology which can include different methods (BBM, DRIFT and Stressor-Response) to quantify the Reserve scenarios, all of which are compatible with the steps in the process illustrated in Fig. 2.2.