CONJUNCTIVE USE OF SURFACE AND GROUND WATER IN EFFICIENT MANNER

‘Conjunctive use’ as for many such technical terms, is the subject of a range of definitions. It is defined by Foster et al. (2010) as a situation where both groundwater and surface water are developed (or co-exist and can be developed) to supply a given irrigation canal-command – although not necessarily using both sources continuously over time nor providing each individual water user from both sources. Alternatively FAO (1995) described conjunctive use as ‘use of surface water and groundwater consists of harmoniously combining the use of both sources of water in order to minimise the undesirable physical, environmental and economical effects of each solution and to optimise the water demand/supply balance’.

Because different stakeholders are involved in the conjunctive use of surface and ground water resources, a conflict –resolution techniques should be employed to resolve conflicting interests. The main issue related to conjunctive use of surface and ground water in efficient manner is to have some form of institutional arrangement and regulatory framework related to groundwater management addressing issues such as sustainability. The regulatory settings for water management for different States will be the most important setting for management approaches. Any institutional strengthening will need to be supported by strong policy and possible legislative changes.

Number of studies have been undertaken by large number of institutions, government departments etc for establishing feasibility of conjunctive use of surface and ground water in India. The Studies have established that the isolated use of surface water ignoring optimal ground water use in irrigation command has resulted into various environmental problems. Optimal conjunctive use plan to be implemented by the State agencies in co-ordination with CADA has been recommended. The recommendation of the completed Conjunctive use studies needs to be implemented on the ground. Further, it is also felt that there is a need to adopt Ground Water Management Models which incorporates a ground water simulation model as constraint in the Management model which can be efficiently used in planning the conjunctive use of water.

In many instances, there will be a need to understand and review the current approaches to allocating rights to water, and the form and attributes of those rights. In many situations, policies and regulations may be poorly formulated and hence not operating efficiently to achieve the intended outcomes. Effective water allocation planning is paramount. Such planning will need to be supported by strong national policy and to occur within a framework that ensures sustainable levels of take and use of the resource. This will require significant technical input, especially within the context of the need to assess the available consumptive pool. Conjunctive use management will rely on water policies and regulations that are efficient at promoting movement of access between the two resources when required and appropriate. The purpose of the deliberations under this subtheme is arrive at strategies to maximise the benefits arising from the innate characteristics of surface and groundwater water use through planned integration of both water sources, in order to provide complementary and optimal productivity and enhance water use efficiency outcomes.