

Statement by Mr. Kerry Turner, Professor at the University of East Anglia, UK

As water becomes increasingly scarce, competition for water between the agriculture, municipal, industrial and environmental sectors will inevitably increase. The formulation and implementation of a more *integrated approach* to water resources, encompassing a multi-sectoral view of water use on at least a catchment scale are required to be economically efficient, socially acceptable and sustainable. The required overall policy framework presents a formidable set of challenges, encompassing agricultural price policy, social equity concerns, governance and ecological sustainability etc. This requires a “pragmatic but principled” approach (World Bank, 2003) and an *incremental* process of change can be envisaged, rather than ‘revolutionary’ change.

Economic cost benefit analysis and pricing regimes can play significant role in achieving the goal of water productivity enhancement. However, access to traded water services is also conditioned by the ability to pay, and thus is also an equity issue. Water pricing can play a twin role: as a mechanism for signalling scarcity value and opportunity cost of water within and across sectors; and as a financial mechanism to ensure ‘full’ cost recovery. This can mean the introduction of actual prices and charges, but can also refer to the inclusion of economic valuation of the resource into an appraisal and accounting procedure such as cost benefit analysis. Economic measures need to go hand in hand with institutional reform, technological innovation, and other investments.

Price elasticity of irrigation water demand is often low. To balance supply and demand prices could have to rise to the equivalent of 20% (not a few %) of net farmer income. This is clearly not feasible as a policy measure. Even if higher prices would be introduced, the effects of price on overall water demand and sustainability are not clear cut; the gains from efficiency in a particular use may be offset by increased water withdrawal across a catchment as farmers increase irrigated area and/or switch to higher value (but more water intensive) crops. Rather than simply introducing pricing, a package of measures is required, including economic, institutional, technological and capacity building measures.

Fundamental to the new sustainable water management strategy is the adoption of a *functional ecosystem perspective* for water resources. This can be described as a four step approach: defining the ecosystem, assessing ecosystem functions, linking those functions to functioning outcomes and services, and finally, the valuation and evaluation of these outcomes and services. For this valuation, the concept of total economic value (TEV) can be used. TEV consists of Use values, both direct and indirect (e.g. flood protection, carbon sequestration sink), and Non-use values (NUV) (e.g. values attached to the existence of endangered species). Non-use values have proven significant, but highly difficult to translate into monetary price tags. However, total *economic* value is not the total *ecosystem* value – an intrinsic value lies beyond this economic valuation. Finally, in using valuation, marginal values, rather than aggregate social values, are the more useful values to support the actual decision making processes.