As many others have commented, the report lacks a coherent structure, a weakness that ripples through all the sections. At the same time, there is a tremendous amount of valuable material in the report. My comments are intended to offer a structure, which I am relabeling as a "frame" within which the major elements of the current draft might be more constructively arranged, and the need for new elements will become more clearly apparent.

**The Frame: Regenerative Water Management for Food Security**

In my view the report needs more than a better structure; it needs to be framed around a central argument, and that argument will necessarily espouse certain values and ethical positions. These should be expressed deliberately and clearly so that the values being championed (e.g., promoting social equity or protecting freshwater biodiversity) can be distinguished from the technical prescriptions intended to support those values. This transparency of values can help in the processes of evaluating among alternative solutions.

The frame which I am suggesting would incorporate "strong sustainability", or sustainability with an eye to environmental regeneration and resilience. Our goal should be to identify water management strategies which will not only sustain food production, but will actively enhance the resilience of freshwater ecosystems (rivers, lakes, aquifers, wetlands, and estuaries) and the food systems (physical, technical, and socio-cultural) which rely on those waters. This frame would be fundamentally environmental. The underlying argument is that enhancing the health of water ecosystems and agricultural ecosystems (including soils, agro-biodiversity, and adjacent lands) is a necessary condition for food security. A further justification of this "environmental fundamentalism" comes from the well accepted definition of sustainability from the 1987 Brundtland Report, "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." as well as Aldo Leopold's maxim from his 1949 essay on The Land Ethic: "A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise."

**From Principles to Prescriptions**

Establishing the principle that healthy water and land ecosystems comprise the sine qua non of food security provides an orientation for developing strategies for water management and
agricultural production. But environmentally-friendly production is only the foundation, not the goal. We need to bring additional values into the frame to identify those strategies which meet all our values at once, or as many of them as possible.

Where can we go to find a set of values which have some legitimacy and are not merely the creation of the report's authors? The past several decades have provided us with a rich legacy of broadly agreed ethical standards for both water management and agricultural management, many of which are discussed in the current V0 Draft. The 1992 Dublin Conference not only labeled water as an inherently economic good, but also called for participatory management at the lowest possible level, underscored the special role of women in water provision and use, and highlighted the priority of protection of natural ecosystems. Subsequent declarations and UN declarations and resolutions have established a very detailed right to food, as well as a right to water (nicely presented in the V0 Draft, pp 69-71).

The already agreed-upon principles of sustainable water management and parallel principles of sustainable agriculture provide the basis for articulating a systematic set of principles (values) which both water management and agricultural practices should comply with, to meet the challenge of food security. These principles include the following:

- In water allocations, priority should go to reasonable food crops grown with reasonable water efficiencies (Much depends on the local details);
- water ecosystems should be kept in good condition (borrowed from EU Water Framework);
- promote social equity and opportunity (including through affirmative action for disadvantaged groups);
- promote health and nutrition through agricultural practices and food choices
- integrate climate-mitigation aims into Ag practices (e.g., carbon sequestration in soil);
- respect social and cultural value of traditional foods/practices;
- promote participatory, decentralized governance of water, watersheds, and rivers;
- favor local food production as food security strategy (localism)
- use global food trade as water security strategy (e.g., importing virtual water)
- etc.

Once the principles/values have been carefully crafted, a set of operational prescriptions can be developed around them. These prescriptions would serve as guidance for selecting among alternative strategies for water management, soil management, crop production, livestock practices, etc. What's the best agricultural strategy, in terms of food security, for a particular farm, watershed, or landscape? Should policies favor industrial capital- and chemical-intensive practices, or agro-ecology integrated systems? If the values to be honored have been comprehensively articulated, the process of evaluating the relative merits of alternative strategies and policies will rest on a consideration the values that will be promoted through the policies, rather than on the policies themselves.

The Recommendations section of the report would be tightened and strengthened through rewriting the recommendations as policy prescriptions, which can advance the values which have already been agreed upon through decades of international meetings. Even in the case of values which are newer and less firmly agreed upon (e.g., how high a priority should be given to carbon sequestration in soil management), the report could take a position about the
importance of this practice, and then incorporate that value into a policy prescription (e.g., Policies should favor agro-ecological approaches which maximize soil carbon), so long as the development of this position is transparent.

Specific Comments on the Report

> Multifunctional Agriculture is mentioned only once (p. 29) but deserves to be cited as an approach to conceptualizing the links between water/Ag sustainability and food security. The basic logic is that keeping food systems viable requires attention to the whole set of multifunctional interactions, including cultural heritage and identity, secure employment, social standing in the community, etc.. [Reference: Groenfeldt 2006, Multifunctionality of Agricultural Water: Looking Beyond Food Production and Ecosystem Services. *Irrigation and Drainage* 55:1-11]

> Discussion of integrated farming systems (pp 37-38) and agroecology (p. 44) should be greatly expanded [as others have pointed out]

> Human waste and compost as a source of fertilizer (p.46). The potential for capturing human waste (in both rural and urban settings) and processing into fertilizer has strong food security implications which the report should discuss. In rural settings waste recovery is tied to sanitation, so there is a double benefit of fertilizer and improved sanitation. In urban settings there is also a double benefit of expanding wastewater treatment (and avoiding a major source of water pollution) and a source of fertilizer. Capturing urban compost also has health benefits (minimizing rats) and fertilizer benefits.


> Water rights (pp 51-53) - The discussion about prior appropriation is not directly relevant to developing countries. Instead, the discussion should focus on the water markets as an emerging trend with implications for water security for the poor. [These markets are based on the ethic of prior appropriation, but it confuses the issue to talk about this specifically American practice.]

> Decentralization of water management (p.58) - This discussion paints too gloomy a picture of WUAs being coopted by the wealthy. The potential of community capacity-building through small farmers' participation in water user associations remains promising, if too often unrealized. The decentralization discussion should also discuss how watershed associations and river basin organizations can be opportunities for rural poor and small farmers to voice their interests.