

## **The potential of inland valley swamps in contributing to food security in Africa**

Abdulai Jalloh

Institute of Agricultural Research, PMB 540, Freetown, Sierra Leone  
(E-mail: iarsl@sierratel.sl)

The traditional shifting cultivation in which bush fallow is relied on for the restoration of soil fertility has gradually become inappropriate due to the rapid increase in human population resulting in increased pressure on the land. Consequently, the fallow period has shortened thus severely limiting fertility restoration which has resulted in low crop yields. In addition to low crop yields there is also rapid deforestation and its attendant consequences. A major challenge, therefore, is adapting the agricultural production systems, which maintain soil fertility, enhance biological diversity and conserve the environment. It is becoming apparent that intensification of production is inevitable. For Africa, this poses a great challenge in the face of very limited inputs and appropriate machinery. One possible option for ensuring increased food crop production to feed the growing population in Africa is to intensify crop production in those ecosystems like the Inland Valley Swamp Ecology (IVS) that lend themselves to sustainable intensification while decreasing the intensity of production in the more fragile ecologies particularly the uplands. Inland valleys are located upstream from the flood plains of river basins covering about 130 million ha in intertropical Africa. Flooding during the rainy season ensures adequate water for growing rice while residual moisture together with easy access through shallow wells to the water table during the dry season ensures year round cultivation. Nutrients washed away from adjacent lands replenish fertility of the IVS. There is increasing cultivation of traditional upland crops which do not tolerate flooding in the IVS during the dry season when the water table recedes below soil surface. A host of vegetables have been predominantly grown in IVS particularly in peri-urban areas. There is also increasing cultivation of growing cassava one of the most important crops in Africa, in the IVS during the dry season mainly for the leaves which are used as vegetables in many countries in Western and Central Africa. Challenges in adapting cassava in IVS have been the short flood free period and varieties adapted to the ecology. Efforts geared towards alleviating these problems include water management practices like mounding and breeding varieties that will bulk appreciably during this short period. Results of studies in Sierra Leone suggest that mound heights of 65 – 85 cm are appropriate for most IVS in Sierra Leone and timely harvesting prevents rotting of the tuberous roots. There is great potential in IVS to increase and intensify crop production to feed the growing population in Sub-Saharan Africa.