Integrated Crop Management (Flagship 3): Lack of good soil-management practices or mismanagement threatens soil health and environmental sustainability, as evidenced by declining soil-carbon reserves and multi-nutrient deficiencies in dryland regions. Therefore, building the resilience of dryland-cereals production systems depends largely on soil health and water-management practices. This flagship focuses on interventions of crop-soil-water management at the watershed-catchment level to enhance the productivity (IDO1), and adaptability to environmental variability (IDO5), of dryland cereals. Extensive **soil mapping** and **balanced fertilizer recommendations through micro-dosing** will be important focus areas for soil management, along with waste recycling and biomass generation, where possible, for the reduced use of chemical fertilizers and the development of sustainable systems. On the water-management front, dryland-cereals production will be linked with ***in-situ* and *ex-situ* water-management** options including **micro-irrigation** through synergistic efforts with Dryland Systems. The success of the *Bhoochetana* initiative for improving crop productivity and livelihoods in Karnataka, India, provides a model that can potentially be tailored and out-scaled to other parts of Asia and Africa for enhanced productivity and environmental sustainability. Crop-management practices including seed treatment, **integrated insect and disease management** and other required agronomic practices will be promoted for higher productivity of dryland cereals. **Mechanization of farm operations** for reduced production costs and enhanced efficiency will be addressed for sustainable intensification of dryland cereals production. Finally, climate-information services will be utilized to enable farmers to take ameliorative measures against climate aberrations to minimize production losses and optimize resource utilization. This Flagship will plan joint research with Flagship 2 to ensure that varieties and hybrids integrate the newly proposed management practices.