East Asia and Europe (ECA):
From weak competiveness to improved water productivity and export diversification

Efficiency of water conveyance and of returns/m3 of water applied are generally low in East Asia and Europe (ECA), and in addition the low capacity utilization on large schemes increases costs for the farmers who are irrigating. Other factors impairing competitiveness include the high energy costs, particularly for the lift systems, often small farm size, and insecure land tenure. Yields are variable and there is a considerable yield gap for many producers (see Figures 1 and 2). There is considerable further scope for improving productivity by a combination of improving water delivery service and drainage, improved agronomic and in-field water management practices, and reducing costs (including through transferring irrigation O&M to WUAs at on-farm and inter-farm levels); and competitiveness can be improved and fiscal outlays reduced through targeted investment in infrastructure and institutional development. Agriculture and land reform measures have to accompany reform and investment in I&D to ensure that competitiveness can be restored. Figure 3 shows actual against theoretically attainable wheat yields: much of the difference between ECA and Western European levels may be covered by simple improvements such as better water control.

For example, the World Bank supported Kazakhstan Irrigation and Drainage Improvement Project (IDIP, FY96 to FY04) rehabilitated 15 sub-projects in 9 governorates covering more than 32,000 ha of irrigated lands, which were previously nonfunctional due to lack of I&D investment. Crop yields increased between 12-200%. By IDIP, farmers were empowered to invest in good farming practices, acquire better farm inputs and extension services, save water, and gain more experience including in marketing their products. Thus IDIP promoted sustainable agricultural production while improving water management and O&M. At completion, IDIP’s overall ERR was estimated at 32% and the ERRs for its individual subprojects ranged between 12% to 23% (with one subproject, Maktaral scheme, obtaining a very high ERR at 51%).

In Kyrgyzstan, with the right investments in both infrastructure and institutions, yields are higher than comparable countries. In areas where WUAs operated and water service was improved, yields increased, equivalent to those of Egypt and only slightly lower than the USA. This demonstrates that in many locations and for many crops there is scope to close the yield gap through relatively straightforward investments in the irrigation infrastructure and its management. Making these investments would allow ECA countries to increase yields towards attainable levels at relatively low cost.

Figure 1: Cereal yields in ECA and worldwide (2008)

![Figure 1: Cereal yields in ECA and worldwide (2008)](source: World Development Indicators)

Figure 2: Cotton yields in ECA and worldwide (2009)

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Figure 3: Potential yield improvement: example of wheat (Source: Bruinsma 2009\(^1\))