**Jordan: Agricultural Sector Adjustment Programme**

**Ex-post evaluation**

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| **OECD sector** | 31110 / Agricultural policy | |
| **BMZ programme ID** | 1994 66 251 | |
| **Programme-executing agency** | Hashemite Kingdom of Jordan, represented by the Ministry of Planning | |
| **Consultant** | - | |
| **Year of ex-post evaluation** | **2005** | |
| | **Programme appraisal (planned)** | **Ex-post evaluation (actual)** |
| **Start of implementation** | 4. Q 4 1994 | 4. Q 4 1994 |
| **Period of implementation** | 16 months | 8 years |
| **Investment costs** | EUR 15.34 million | EUR 15.34 million |
| **Counterpart contribution** | - | - |
| **Financing, of which Financial Cooperation (FC) funds** | EUR 15.34 million | EUR 15.34 million |
| **Other institutions/donors involved** | World Bank | World Bank |
| **Performance rating** | 4 | |
| **• Significance / relevance** | 4 | |
| **• Effectiveness** | 4 | |
| **• Efficiency** | 4 | |

**Brief Description, Overall Objective and Programme Objectives with Indicators**

The programme was to improve the overall conditions in agriculture and enhance the international competitiveness of the Jordanian agricultural sector (overall objective). In so doing the efficient, sustainable use of the country's scarce natural resources – above all water – played a key role. Distortions in the incentive structure, which mainly encourage uneconomic water consumption in the agricultural sector, were to be eliminated, the foundations laid for a national water policy, and the performance of the institutions relevant to the water and agricultural sectors was to be improved. The adjustment measures in the agricultural sector were accompanied by targeted technical support in the areas of water management and agricultural research and advice for the purpose of enhancing the competitiveness of agricultural production. The goals of the programme included improvements in those areas in which the reforms were introduced, and the achievement of the goals was to be measured against the actual introduction and non-repeal of the respective reform measures.

**Programme Design / Major Deviations from the original Programme Planning and their main Causes**

The programme comprised a catalog of reform measures in the agricultural and water sectors. These measures concentrated on three main areas: sustainable use of natural resources,

liberalization of domestic and foreign trade, and focus by the state on its core tasks in the agricultural sector. The implementation period of 8 years was considerably longer than planned (programme appraisal: 16 months). In retrospect, the time schedule was clearly unrealistic, in terms of both the expected speed of reforms in the politically sensitive water sector and also the attainability of the goals via the planned measures. A short-term improvement in the competitiveness of Jordan's agricultural sector with the planned measures was not feasible, and necessary compensatory measures to reduce political resistance were not an integral part of the programme. Conflicts of goals between timely support for the balance of payments and the implementation of the conditions for reform gave rise to coordination difficulties among the donors involved.

First core area of the reforms: sustainable use of natural resources

a) Improvement in the institutional environment

A key prerequisite for reforms in this core area was the creation of an **appropriate institutional framework** comprising both restructuring and the clear reassignment of responsibilities for the agencies in charge of the water sector (Ministry of Water and Irrigation [MWI], the Water Authority of Jordan [WAJ] and the Jordan Valley Authority [JVA]). However, the originally planned reforms were only partially implemented. In 1999 the MWI assumed responsibility for water resource planning and management and for the monitoring of groundwater resources. It introduced a **National Water Master Plan** to serve as the main planning instrument for managing the country's water resources. There is still room for improvement regarding the assignment of responsibility for operation and regulation among the MWI, WAJ and JVA, as the responsibilities still overlap in some cases. In the past few years there have been organizational improvements and a hesitant reduction in personnel at the WAJ. The WAJU now (2003) covers its operating costs to 131% (in comparison: 95% in 1997). At the JVA, the most that has been achieved thus far is the elaboration of concepts. Hardly any improvements in operational and economic efficiency can be noted at the JVA (apart from a minor reduction in personnel), and there is still a tremendous need for reform in the operative and administrative areas.

b) Demand management through an increase in irrigation tariffs

In order to achieve better allocation of scarce water resources, a reduction in water consumption and an increase in cost coverage at the JVA, the irrigation tariff was to be increased in two phases. The first increase to an average of JD 0.015/m³ (= EUR 0.025/m³) was implemented as agreed, while the second one, planned for 1996 to JD 0.025/m³, was not. The current average tariff is JD 0.013/m³ (and taking the collection rate into account, only around JD 0.011/m³) and is thus far below the original goal of JD 0.025/m³. Owing to insufficient cost savings and the non-adjustment of tariffs, the intended coverage of operating costs was not attained for the JVA. In 2003 the JVA covered only 47% of its operating costs with tariff revenues (17% in 1993). Since the second increase in the irrigation tariffs did not take place, there was also a lack of incentives to introduce water-saving irrigation methods and to switch to agricultural production based on more water-efficient crops. Nation-wide the irrigation area of approx. 57,000 ha in the years 1996-2004 rose to approx. 71,000 ha. This was primarily the result of the expansion of tree crops requiring irrigation in the highlands. On the other hand, for several years treated sewage as well as brackish water have increasingly been used for irrigation purposes in agriculture (share of irrigation water: currently 14%) in order to reduce freshwater consumption.

c) Creation of control mechanisms for groundwater use

To limit the exploitation of groundwater resources in the highlands, so-called basin management plans were elaborated nation-wide and organizational structures within the WAJ were set up to meter and invoice groundwater consumption. Many of the approx. 3,800 existing private wells have since been equipped with large water meters that are read regularly. The invoices for

groundwater use that are sent by the WAJ have been paid by only a few farmers thus far, and quantitative breaches of water use licenses were not punished. The state is currently attempting to assert its claims in the courts, yet the result remains to be seen.

Second core area of the reforms: liberalization of domestic and foreign trade

In the period from 1995-1997 state price controls and profit caps were cancelled for a number of agricultural products, as were state-supported prices for tomatoes. In addition, the state purchase prices that subsidized national barley production and subsidies for imported animal feed were repealed as well. In April 1997 the state began full liberalization of barley imports and sales. Additionally, the government liberalized wheat imports and cancelled its high bread subsidies, which was not foreseen in the programme but had a positive effect on the state budget. What is more, various state import monopolies and import/export bans were repealed, as were import quotas for the 45 main products (target: 50 products). In return, customs duties ranging from 5-50% were introduced for these products, the weighted average of which does not exceed the agreed limit of 30%.

Third core area of the reforms: concentration by the state on its key tasks in the agricultural sector

A programme to reorganize the Ministry of Agriculture was designed with the help of the GTZ and USAID. This programme provided for, among others, the privatization or decentralization of business areas and an improvement in the management and efficiency of the work performed by the Ministry. Initial restructuring measures began in 1999, yet no significant results can be observed thus far. The private sector still does not play much of a role, and improvements in the efficiency or in cost reduction cannot be noted.

With the support of the GTZ a strategy was drawn up in 1997 to improve agricultural advisory services. The implementation of the strategy was supported via complementary measures by the GTZ and the World Bank; yet substantial improvements failed due to the poor performance and motivation of the personnel. The National Center for Agricultural Research and Technology Transfer (NCARTT) received technical support by the World Bank under its Agricultural Sector Technical Support Project (ASTSUP), enabling it to adapt its research activities to the new agricultural policy priorities. The NCARTT has generated relevant research results in connection with optimizing the use of irrigation water and pesticides. However, these results have so far been insufficiently transferred to advisory services and to farmers.

Improving the agricultural credit systems requires coordination of a new strategic orientation and of a structure that will give greater autonomy to the Agriculture Credit Corporation (ACC). The ACC has not yet been implemented and/or commercialized, and farmers have not yet benefited from better access to agricultural credit.

**Key Results of the Impact Analysis and Performance Rating**

Agricultural sector

The relevance of the agricultural sector has dropped from 7% of GDP in 1994 to currently around 3%. Concurrently, agricultural export earnings declined by 30% between 1993 and 2003, whereas agricultural imports increased by about 20%. Solely the share of people working in the agricultural sector increased slightly from 10% in 1994 to 13%. The agricultural sector has become less competitive overall since the programme appraisal was carried out. At that time agriculture accounted for some 75% of total water consumption. This share has since declined to about 66%.

Water resources – the situation

Jordan's water scarcity, which is extreme in global comparison, is one of the main bottlenecks hindering the country's socio-economic development. Compared to the time of the programme appraisal, the quantity of available, renewable water declined further from 220 m³/a to approx. 200 m³/a per capita (the population growth rate of 2.6% should also be taken into consideration). On the one hand, annual consumption of groundwater currently amounts to approx. 500 million m³ (1994: 508 million m³), yet the average renewal of the groundwater reserves amounts to only 280-300 million m³, which – if the situation remains unchanged - translates into a consumption overhang of around 60-70% that will lead to a further decline in the groundwater level and, in individual cases, will cause the salinity of some wells to increase or may even cause some wells to dry up.

Apart from seasonal bottlenecks for the population, the impacts of insufficient water can be felt in agriculture as well. For instance, now only around two-thirds of the irrigated areas receive adequate supplies of water. Water for agriculture is rationed, primarily in the summer. The excessive consumption of the groundwater reserves is due chiefly to irrigation agriculture. The competition between drinking water supply and agricultural irrigation is becoming more heated in view of the high population growth rate, the aspired economic development and the planned intensification of agriculture. In order to prioritize supplying the rapidly growing population with freshwater, in irrigation agriculture the freshwater is to be increasingly replaced with treated sewage.

Achievement of objectives

One of the main objectives of the Sector Adjustment Loan (SAL) - to encourage a structural change in agriculture in terms of economically and ecologically sustainable use of extremely scarce water resources - was only achieved in part. Despite a pro-rata reduction in agricultural water consumption and the recycling of treated sewage for use in agriculture, the consumption overhang of the groundwater reserves persists on a large scale. Water-intensive fruit plantations continue to dominate the Jordan Valley, even though vegetable farming requires less water and more labor (thus relevant in terms of labor policy) and would produce similar income with 2-3 harvests a year. Although the planned measures to control groundwater extraction were applied and the political will to charge and collect water tariffs in the Jordanian highlands now exists, the actual implementation has failed thus far owing to resistance by special-interest groups, above all politically influential landowners. Therefore, the programme goal of reducing groundwater use was not attained. On a positive note, however, at least the partial reforms that were introduced have not been repealed.

The reform measures planned to liberalize the agricultural markets and foreign agricultural trade were introduced. In this way, the government reduced distortions between domestic prices and world market prices as well as surplus production while also liberalizing imports and exports through the elimination of trade monopolies (for bananas, among others). Consumer prices for fruit and vegetables have since fallen, whereas grain prices have risen owing to the cancellation of subsidies. The repeal of animal feed subsidies led to a drastic drop in livestock (between 25-50% depending on the region) and reduced the pressure on pasture land, which was heavily degraded in some cases. The subsidy cuts led to state budget savings of about JD 14 million p.a.

In the institutional area the agreed measures have, for the most part, been introduced, yet overall they comprised the elaboration of studies, restructuring concepts and efficiency enhancement programmes. Resistance by the stakeholders in the relevant state institutions in the water and agricultural sectors have largely blocked the implementation of institutional reforms, personnel cutbacks as well as commercialization and private-sector participation. The

expected impact of the improvement in public agricultural services on the target group - i.e. the farmers - did not occur. Personnel and technical support under the flanking project ASTSUP could not contribute to improving the agricultural services as much as desired, either.

On the other hand, progress was achieved by defining a strategic approach for integrated water resource management that goes beyond the policy approach defined for the water sector at the time of the programme appraisal. Despite scarce water resources, when the programme began long-term, cross-sector water plans were lacking. Since the water sector was declared a priority sector of German Development Cooperation (DC), Financial Cooperation (FC)/Technical Cooperation (TC) changed from purely project-based cooperation into strategic cooperation in the sector and an intense policy dialogue with the Jordanian government and the other donors ensued. The reform process in the water sector that was launched through the SAL served as the basis for the elaboration of an **action plan** (with German advice) that was adopted by the cabinet of the Jordanian government in 2002. The action plan contains more far-reaching reform measures on the institutional level, the implementation of which is reviewed annually by measuring the achievement of specific milestones. Even if the application of the reforms is not progressing as quickly as expected, the action plan has become an important framework for determining the need for advice and investment and for cooperation with the donors, and constitutes in itself a coherent German DC concept for the water sector.

Programme impacts

During the course of liberalization of the agricultural markets, the price drop for grain and the elimination of subsidies for animal feed had negative impacts on the income situation of small crop and cattle farmers and led to more poverty in rural areas. Lower market prices due to cheaper imports, surplus meat production due to the reduction in livestock numbers, and higher costs for irrigation water have all weighed down on the profit margins. Measures to help agriculture adjust to changed market conditions such as the introduction of competitive agricultural products, improved irrigation technologies and marketing strategies as well as trade support and assistance with the entry into new export markets were either not sufficiently implemented or not at all, due in part to Jordanian resistance. Thus, key compensatory measures were not introduced whose implementation was considered a key prerequisite for a smooth adjustment at the time of the programme appraisal. Contrary to the goal of strengthening Jordan's agricultural sector, in fact the sector's competitiveness declined overall. A positive effect on the balance of payments owing to higher agricultural exports did not arise.

The negative income effects of the reforms on the farmers were aggravated by periods of drought in the years 1998-2001. This fanned the flames of political resistance to higher water tariffs for agriculture and, at the JVA, encouraged feelings of sympathy for farmers whose payments were in arrears and, in some cases, to the cancellation of their debts. Against the backdrop of inadequate compensatory measures under the SAL this loss of income by the farmers gave rise to a conflict of interest within the Jordanian government between efficient and sustainable use of the water resources (to be achieved primarily through an increase in water tariffs), on the one hand, and prevention of additional losses of income by the farmers by refraining from increasing or introducing water tariffs, on the other hand. This conflict of interest could already be observed at the time of the programme appraisal, which is why it was agreed to add monitoring of the farmers' income as an integral part of the SAL. However, soon after liberalization of the agricultural markets the farmers' income began to shrink. As a result, no compensatory 'cushioning' measures were introduced. If part of the loan had been used to finance such measures, political resistance to a second increase in irrigation tariffs would probably have been lower, and this in turn was a key precondition for introducing a structural change in irrigation agriculture towards crops requiring little water without causing much social friction and, at the same time, for covering the operating costs of the JVA.

Another factor that rendered the situation more complicated was that the World Bank, as the main stakeholder in the sector, saw itself confronted with a conflict of interest since with the SAL it was – apart from the reforms in the agricultural and water sectors – also aiming for macroeconomic goals, namely a balance of payments adjustment. The bridging of the financing gap in Jordan's balance of payments in the years 1994-1996 required rapid disbursement of the loan via untied budgetary support for general imports whereas in terms of achievement of the programme goals the loan funds – at least in part - would have been better spent on necessary compensatory measures, even if this procedure would probably have led to a slowdown in the flow of funds.

Overall, we assess the impacts of the programme as follows:

- The programme objectives were either not achieved or only to a limited extent. A structural shift in irrigation agriculture towards sustainable, efficient use of the scarce water resources did not take place. Although the share of total water consumption attributed to agriculture declined slightly, the degree of overuse of the groundwater resources remains dramatic. A clear separation of responsibilities among the institutions in the water sector is still lacking. Complementary advisory services and technical support measures could not contribute to improving the agricultural services to the extent desired. In contrast, the domestic and foreign liberalization of the agricultural markets was a success. Overall, we rate the **effectiveness** of the SAL as slightly insufficient (sub-rating: 4).

- There has been only rudimentary improvement in the overall conditions in the agricultural sector, and its international competitiveness has decreased. Export earnings have declined whereas agricultural imports have increased. Thus, as regards achievement of the overall objective the developmental relevance of the SAL is negative. Liberalizing the agricultural markets led to significant losses in income for the farmers and to greater poverty in rural areas because compensatory promotional measures, e.g. the switch of agricultural production to profitable agricultural export products, or social protection measures, were insufficient overall. The programme's impacts on the poverty situation cannot be evaluated conclusively as urban residents benefited from lower food prices. The cancellation of the animal feed subsidies led to a drop in the number of livestock and decreased the pressure on the limited pasture land. What is more, the SAL served as the basis for a programme approach in the water sector that has since become the basis for Jordanian water policy. Overall, the **relevance** and **significance** of the SAL are slightly insufficient (sub-rating 4).

- The savings of JD 14 million p.a. in the state budget made possible through subsidy cutbacks exceed the volume projected at the time of the programme appraisal (approx. JD 10 million p.a.). The complexity of the SAL and its economic interplays – which were nearly impossible to estimate – render a quantitative assessment difficult. The intended efficiency gains in the water sector (especially at the JVA) were not attained. As a result, the state budget remains under considerable pressure. In retrospect, implementing the price reforms in the water sector was not realistically to be expected in the period originally planned. Yet, since these were implemented only in part by the end of the programme (after 8 years instead of 16 months as planned), overall the programme's **efficiency** is judged to be slightly insufficient (sub-rating: 4).

Taking the above mentioned key development criteria into account, we judge the developmental effectiveness of the programme to be slightly insufficient (**overall rating: 4**). The World Bank, on the other hand, attributes the programme 'moderate' success, particularly on the basis of the high volume of liberalization measures (second core area of the reforms), which exceeded the plans.

## General Conclusions

When structural adjustment programmes are supported jointly by several donors, the procedure in case of delays in the reform steps should be agreed and should be clear in order to avoid sending conflicting signals to the recipient.

When planning the measures, more emphasis should be placed on the various points in time when they take effect to avoid a situation where reforms which the stakeholders basically back are blocked because efficiency gains arise considerably later than the occurrence of costs. The indicators should cover the spectrum of major reform impacts.

If the structural adjustment measures have negative effects on certain parts of the population that are no longer acceptable, the programme design must provide for adequate compensation. If these effects arise unexpectedly, the programme design must allow for sufficient flexibility during implementation to be able to react accordingly.

**Legend**

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| Developmentally successful: Ratings 1 to 3 | |
| Rating 1 | Very high or high degree of developmental effectiveness |
| Rating 2 | Satisfactory degree of developmental effectiveness: |
| Rating 3 | Overall sufficient degree of developmental effectiveness |
| Developmental failures: Ratings 4 to 6 | |
| Rating 4 | Overall slightly insufficient degree of developmental effectiveness |
| Rating 5 | Clearly insufficient degree of developmental effectiveness |
| Rating 6 | The project is a total failure |

**Criteria for the Evaluation of Project Success**

The evaluation of the "developmental effectiveness" of a project and its classification during the ex-post evaluation into one of the various levels of success described in more detail below concentrate on the following fundamental questions:

- Are the project objectives reached to a sufficient degree (aspect of project **effectiveness**)?
- Does the project generate sufficient significant developmental effects (project **relevance** and **significance** measured by the achievement of the overall development-policy objective defined beforehand and its effects in political, institutional, socio-economic and socio-cultural as well as ecological terms)?
- Are the funds/expenses that were and are being employed/incurred to reach the objectives **appropriate** and how can the project's microeconomic and macroeconomic impact be measured (aspect of **efficiency** of the project concept)?
- To the extent that undesired (side) effects occur, are these tolerable?

We do not treat **sustainability**, a key aspect of project evaluation, as a separate category of evaluation but instead as a cross-cutting element in all four fundamental questions of project success. A project is sustainable if the project-executing agency and/or the target group are able to continue to use the project facilities that have been built for a period of time that is, overall, adequate in economic terms, or to carry on with the project activities on their own and generate positive results after the financial, organizational and/or technical support has come to an end.