

Peer Review of Second On-Farm Irrigation Project (OIP-2) GAFSP Proposal for the Kyrgyz Republic

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Introduction

1. This review has been prepared at the request of the Second On-Farm Irrigation Project Implementation Unit under the Department of Water Resources (DWR) of the Kyrgyz Republic. The review is based on a desk study of the following document:

“*Main Text Proposal*” [the Proposal] by the Ministry of Agriculture and Ministry of Health for Funding for Agriculture Productivity and Nutrition Improvements under the Global Agriculture and Food Security Program (GAFSP).

2. The review was also informed by the following documents:
 - a. *The Concept of Food Security [FSC] of the Kyrgyz Republic for 2009-2019*, including Annexes 1, 2 and 3 (2009-2016 Prognosis)
 - b. *The Program of Ensuring of Food Security of the Kyrgyz Republic for 2009 – 2015* (Ministry of Agriculture, Water Resources and Processing Industry of the Kyrgyz Republic)
 - c. *Medium-term Development Programme [MTDP] of the Kyrgyz Republic for 2012-2014* (draft, February 2012) including Annexes 1 and 2
 - d. *Medium-Term Budget Framework [MTBF] for 2012-2014* (2011, excerpt)
 - e. Meeting records from the Proposal consultation process,

Other information sources are footnoted in the text below, and the author has called on his experience with a similar previous Kyrgyz Republic review in September 2010².

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² *Review of the Strategy, Programs and Investment Plan for Agriculture and Food Security in the Kyrgyz Republic*, for Ministry of Finance of the Kyrgyz Republic, submitted September 2010.

3. In carrying out this review, and in accordance with its Terms of Reference, the following aspects are addressed in following sections:
 - a) *“Likelihood for the investment program to realize growth and poverty reduction*
 - b) *Technical realism (alignment of resources with results) and adequacy of institutional arrangements to implement*
 - c) *An inclusive review and consultation process*
 - d) *Consistency of country budgetary and development assistance commitments with the country investment plan*
 - e) *Adequacy for effective and efficient delivery, including M&E*
 - f) *Coherence and or consistency between policies, implementation arrangements and delivery mechanisms, and investment areas, priorities or program objectives*
 - g) *Appropriateness and feasibility of the indicators for impact and system for capacity improvement and accountability*
 - h) *Extent and quality of dialogue, peer review and mutual accountability system”.*
4. Irrigation serves 80% of the 1.3 million ha of arable land in the Kyrgyz Republic, and recurrent expenditure on irrigation accounted for more than 55% of all such expenditure in 2009³, though this was forecast to decline out to 2012 due to completion of some major projects. Irrigation has been a source of ethnic tensions between Uzbek and Kyrgyz communities in the South of the country, but re-establishment of economic interdependence “can be achieved through investments to improve equitable access to natural resources for both communities”.⁴
5. To exploit comments in the previous review mentioned above, investment in irrigation is not a “magic cure” for agricultural development (or poverty reduction) in the Kyrgyz Republic. However, in a land-locked and mountainous country with plentiful but highly seasonal rain/snowfall, it is vitally important, particularly for the development of higher-value (per ha or per tonne) arable crops. Institutional as well as technical/engineering innovation is needed⁵, but renewed investment can offset losses and depreciation in the national irrigation

³ *Public Expenditure Review for the Agricultural Sector*: World Bank, June 2010, para 17.

⁴ *The Kyrgyz Republic: Joint Economic Assessment: Reconciliation, Recovery, and Reconstruction*: Asian Development Bank, International Monetary Fund and The World Bank, July 2010, p.45.

⁵ Sehring, J. (2007) Irrigation reform in Kyrgyzstan and Tajikistan, *Irrigation and Drainage Systems*, Vol. 21, Nos. 3-4, 277-290.

system over recent decades, and reduce threats such as water logging and salinization (and climate change).

6. Increased tariffs for water supply services (MTBF, p. 103) are expected to double the level of “special funds” to be collected from water users by 2011. This indicates that the government is aware of the need to implement realistic pricing for the uses of this valuable resource. The Proposal represents one way to pursue this national goal, which reflects the need to establish sustainable operation and maintenance (O&M) systems throughout the country and its economy.
- i) **Likelihood for the investment program to realize growth and poverty reduction**
7. This “likelihood” clearly depends on the scope for agriculture – i.e. the sectoral focus of the proposed irrigation-related investments – to form the basis (or one of the bases) of national economic growth and poverty reduction. The proposal (para. 4) sets out the fluctuating growth record of the Republic in recent years, with a projected average growth rate of 5.6% in 2012-14, i.e. slightly lower than in 2006-2008 but higher than in 2009 and 2010 (a year of negative growth). It is mentioned that growth remains heavily dependent on production of gold, whose world prices have recently hit almost-record highs but is notoriously uncertain in value, and in any case forms a narrow basis for general economic prosperity.
8. Agriculture also fluctuates in its annual growth rate, averaging 1.3% in 2006-2008, but 7% in 2009 and -2.8% in 2010, and forms a diminishing proportion of GDP – down from 27.1% in 2006-2008 to an expected 17.1% in 2014. However, this share may be an under-estimate, due to measurement difficulties and definitional differences (e.g. degree of marketisation and value added): the Food Security Concept document (September 2010, page 5) suggests that “*agriculture occupies a large sector of economy, producing one third of total GDP in the Republic*”. In any case, the sector employs a very large share of the population (between 40% and 65%, according to source) and higher in rural areas where other sources of economic growth may be scarce. Moreover, the estimated multipliers for agriculture are high, at around 2.6, indicating the potential for agricultural growth to support higher incomes in other sectors of the economy.

9. In terms of poverty reduction, rural areas are reported to have rates of extreme poverty (nearly 40% in 2010) well above urban areas (24%), though with significant variation from region to region. Even allowing for measurement problems, it is clear that agricultural improvements should be able to improve the situation of the many poor families with children.
10. The structure of agriculture in the Kyrgyz Republic is highly variable, due to both geography (mountains with extensive pastoral regions, and relatively small arable and irrigated areas) and land reform, which has resulted in four categories of farm, i.e. state farms, collective farms, peasant farms, and household plots⁶. Though state and collective farms are of relative large average size (387 ha and 79 ha respectively) compared to peasant farms and individual entrepreneurs (2.8 ha), the latter occupy 69% of the arable land, and account for a considerably higher proportion of the national food production, including cereals, for which the proportions approach or exceed 90%. With irrigation vital to most crop production, the proposed project thus focusses on the core element of Kyrgyz agriculture.
11. Seasonal fluctuations and longer-term climatic changes in rainfall (and possibly temperatures⁷) are both important influences on agricultural production in the Kyrgyz Republic. Again, efficient irrigation infrastructure and management is an obvious core element in addressing these challenges, and thus in promoting steadier and better distributed economic growth (and indeed in averting yield decline etc.)

ii) Technical realism (alignment of resources with results) and adequacy of institutional arrangements to implement

⁶ *Special Report of FAO/WFP Crop and Food Security Assessment Mission to Kyrgyzstan*, 7 December 2010, FAO/WFP, Rome; accessed 29 March 2012 at <http://www.fao.org/docrep/013/al970e/al970e00.pdf>.

⁷ According to a recent World Bank report (see later footnote), “Central Asia is expected to experience an increase in mean annual temperature on average of 2°C by 2020 and between 4°C and 5°C by 2100. A decrease in annual runoff of 12% is also projected by 2020, with a potential three-fold increase by 2050. These changes will result in increased incidence of drought, heat waves, and eventual crop losses.... [However, due to scientific uncertainties], the general perception within the Kyrgyz Republic that water resources for agricultural areas are at high risk to suffer from droughts, requires authentication”

12. The MTDP (Annex 3) foresees a substantial gap of \$111 million (KGS 5.5 billion) in funding for the development of the agriculture and processing industry, approximately half the “needed” total of about \$213 million (KGS 10.4 billion). Key Public Investment Program (PIP) projects include those for the Ministry of Agriculture and Land Improvement (MoALI) of about KGS 750 million (\$15 million) in 2012 (about half explicitly for irrigation and water management improvement) and KGS 300 million (\$6 million) in 2013, mostly to be funded by external grants (Proposal Table 4). Much smaller projects, also mainly externally grant-funded, are allocated to the Ministries of Health (for health and social protection) and Finance (for agribusiness and marketing).
13. This is the context for the project costs (Proposal Table 14, pp.38-39) of \$41.261 million (KGS 2.1 billion), which are clearly substantial, though spread over 5 years. Of this, about 63% is for physical irrigation and drainage (I&D) works, 9% for water management capacity-building, 6% for advisory services, 8% for nutrition interventions, 5% for project management, and 9% for contingencies.
14. The project is said (Proposal page 26) to target 86,342 ha of on-farm I&D systems and about 100,000 smallholder farms and farming families containing about 450,000 people. Thus, costs per (on-farm) ha are about \$478 (of which \$303 is for physical I&D), or about \$413 per farm (averaging slightly over 1 ha in area), or about \$92 per farm-based beneficiary. These levels compare with average wage levels (Proposal Table 1, page 5) of about KGS 12,000 (\$240) per worker, with minimum subsistence levels about half that amount.
15. Net farm income levels (Proposal Table 11, page 23) vary very widely by farm size and region, from about KGS 6500 (\$130) per ha to about KGS 38,000 (\$760) per ha. Table 11 also shows that I&D rehabilitation under past on-farm irrigation projects (OIPs) in the Kyrgyz Republic has raised annual net farm incomes by between 7% and 51% depending on region, or by between KGS 2500 (\$50) and KGS 4000 (\$80) per ha. The per-farm/per-ha investment costs of between \$400 and \$500 mentioned above (or about three quarters of these levels if only direct I&D elements are included) are therefore quite high. They also apply to a relatively low share of the national irrigated area.

16. Set against this are various other expected benefits in addition to higher net farm incomes, such as more stable farm incomes, higher incomes in upstream and downstream sectors, better nutrition and lower poverty (assuming that the proposed investments benefit the poorest families, preferably more than proportionally). Less tangibly but in the long run equally important, higher levels of agricultural knowledge should derive from improved extension services, higher organisational capacity from more effective Water User Associations (WUAs) through which the project will be directed and partly financed, and improved health and nutrition from advice and assistance in those areas..

17. As suggested by some NGO representatives in the consultation process⁸, climatic change should be taken into account in planning and designing the long-term infrastructure included in the Proposal.

iii) An inclusive review and consultation process

18. Consultation with a wide range of stakeholders, at both national (including international participation) and regional/local level, was undertaken in a seven-week period in early 2012. The regional/local consultation was undertaken at villages selected in a two-stage process throughout the *oblasts* of the country (see “Possible Selection Bias” under Concluding Remarks below). The professional competence of the participants is difficult to assess but there appears to have been strenuous efforts to include those from both public and private sectors (roughly 50:50 at local level), and with various backgrounds (agriculture, water engineering, health and nutrition, etc.).

19. The consultation is reported to have been influential in developing the proposal between its two phases. Detailed records of meetings⁹ show that a variety of international and national representatives were consulted, and that many views were vigorously expressed. According to the Consolidated Report, after Phase I, *“The design of the project changed from a focus on rehabilitation of irrigation*

⁸ Record of Consultation Program Meeting Wednesday 15 February 2012 with NGO Community for Kyrgyz Republic Proposal for Funding Global Agriculture and Food Security Program.

⁹ See *Consolidated Report on the Consultation Process*, and other consultation records.

and drainage infrastructure and institutional and capacity building for water management to include two additional components on agricultural advisory services and up-scaling of nutrition interventions and social protection”. This converted the proposal into a multi-sectoral one, which clearly brings in problems of coordination and lines of responsibility but greatly broadens the basis of its activities and hence (potentially) justification.

20. Some reliance may also be placed on previous OIP experience, and on the reassuring development of the WUA system within the Kyrgyz Republic. The central role of WUAs in the Proposal is a reassuring sign that the importance of local empowerment in water management is recognised.¹⁰

iv) Consistency of country budgetary and development assistance commitments with the country investment plan

21. The Government of the Kyrgyz Republic faces a severe budgetary problem over the short-term future, with an inertial budget deficit rising from around 20% to 30% (MTDP Table 1, page 3). However, with successful Programme implementation, this is projected to fall to under 10% by 2014.
22. The MTDP states that “*Water resources are not used efficiently, water losses are very excessive*”, and that one of the key objectives of agricultural policy is “*extension of irrigation systems, water use optimization*”. It proposes that (amongst other agricultural measures) “*Development of the irrigation systems and water use optimization will be implemented in two directions: (i) increase efficiency of water sharing between different levels of water management; (ii) increase capacity of the irrigation system, reduction of water loss, capacity building of the water management entities and water user associations*” (paragraphs 133, 140 and 144). The Proposal is therefore fully in line with several MTDP goals.

¹⁰ See Gorton M. et al. (2010) *The Dimensions of Social Capital and Rural Development: Evidence from Water Communities in the Republic of Macedonia*, paper for EAAE Seminar no. 118, Ljubljana, August 2010, for analysis of successful and failing WUAs in a mountainous country.

v) Adequacy for effective and efficient delivery, including M&E

23. The proposal contains detailed arrangements for implementation, with the MoALI as the executing agency with considerable experience in project coordination and implementation. An existing project implementation unit (PIU) with directly relevant experience is to be used for components 1 and 2 (infrastructure rehabilitation and modernisation, and water management capacity building, respectively), using an expanded Project Implementation Manual (PIM). A separate PIU is to be set up for components 3 and 4, i.e. agricultural advisory services, and upscaling nutrition interventions and social protection. As is recognised, these latter components involve complexities, and it is not quite clear why two separate additional PIUs are not proposed for the two different components. Some consultation participants¹¹ advocated a single PIU for the proposal, while others saw the merits of assigning responsibilities to those most familiar with the relevant area, e.g. human health and nutrition. There may be Proposal-wide staff-related economies to be exploited in communications, accommodation, etc., and perhaps in central control, but it is clear that “implementation (and M&E, see next paragraph) will be very different for the various Proposal components.
24. Similarly, for components 1 and 2, previous M&E practices – described in considerable detail in the proposal (pages 34-36) – are to be used and developed. Proposals for M&E of components 3 and 4 are much less developed (pages 36-37), and, as is recognised, will require technical assistance – again, probably of rather different natures for the two aspects – agricultural and social – to be covered.

vi) Coherence and or consistency between policies, implementation arrangements and delivery mechanisms, and investment areas, priorities or program objectives

¹¹ Record of Consultation Program Meeting Wednesday 27 March 2012 with International Bilateral and Multilateral Agencies for Kyrgyz Republic Proposal for Funding Global Agriculture and Food Security Program.

25. The five main principles for agriculture development in the Kyrgyz Republic are¹²: (i) private sector led growth, (ii) public private partnerships for service delivery, (iii) community based management of natural resources and inclusion of vulnerable groups, (iv) community contributions to infrastructure improvement, and (v) inclusion of women in development. The Proposal is clearly coherent with these principles, and particularly principle (iv) in terms of encouraging (via its WUA selection criteria) higher WUA service fees and more effective WUA budget application.
26. In addition to irrigation and drainage, the key pillars of the government's program are: land market reform and management, public/private sector services, rural finance, and social safety nets and food monitoring. The Proposal covers several of these areas.
27. There are generally well-worked-out arrangements for project delivery, involving multi-level and criteria-based selection of WUAs to receive assistance, which will involve continuous financial, design and supervisory contact as developed successfully in previous OIPs. Each project component has been described in some detail, and justified as to "reasons for choice", i.e. development need, food security, country need and Government Priority,

vii)Appropriateness and feasibility of the indicators for impact and system for capacity improvement and accountability

28. Eleven key performance indicators (KPIs) are proposed (Proposal paragraph 89, pages 26-27), based on successful previous use. These KPIs cover physical, financial and satisfaction aspects of I&D improvements, crop productivity increases, and health improvements. Some KPIs require further development if they are to be used to produce non-controversial results, and one or two are vague, e.g. "*Increased participation by water users in development of a national strategy for the irrigation sector*". It is not explained by whom or how data for these indicators is to be gathered.

¹² Record of Consultation Program Meeting Wednesday 8 February 2012 with International Bilateral and Multilateral Agencies for Kyrgyz Republic Proposal for Funding Global Agriculture and Food Security Program (Presentation by Mr. Peter Goodman, Senior Agriculture Specialist, World Bank).

viii) Extent and quality of dialogue, peer review and mutual accountability system.

29. Given the positive comments above on the consultation process, and the fact that this Proposal follows one that was rejected two years ago but builds on two recent OIPs, this aspect seems generally satisfactory. However, this reviewer is not competent to assess the engineering and costing aspects of the Proposal. Moreover, the consultation process and the peer review stage have both been very hurried.

Concluding Remarks

30. A number of aspects are not covered in the reviewed Proposal, although more information, future detailed planning and/or eventual implementation may address these points. They include:
- a. *Regionality*: This addressed at a number of points in the Proposal - e.g. paragraphs 5-10 on poverty and under-nutrition, 73-74 on farm incomes and water fee affordability, and 93-94 on WUA and proposal implementation. However, it is not clear whether relative hazards and risks – which vary greatly across the country¹³ - are to be taken sufficiently into account in selecting WUAs for investment attention.
 - b. *Risk*: The Proposal rightly asserts that “*The key risks are that the required coordination and cooperation necessary for the success of this multi-sectoral approach is not forthcoming because of budget, institutional and capacity constraints*”. Subsequent text (Proposal paragraphs 137-139) specifically identifies inadequate government funding (e.g. for higher-level infrastructure such as off-farm canals), poor construction quality for components 1 and 2, and over-ambition for the social components 3 and 4.
 - c. *Food Security*: Although this is a high-ranking Government objective, it is important to recognise that the Proposal, even if fully funded and successful,

¹³ *Vulnerability, Risk Reduction, and Adaptation to Climate Change: Climate Risk and Adaptation Country Profile: Kyrgyz Republic*. World Bank (2011): Washington DC. Accessed 29 March 2012 at http://sdwebx.worldbank.org/climateportalb/doc/GFDRRCountryProfiles/wb_gfdrr_climate_change_country_profile_for_KGZ.pdf.

will only address a relatively small proportion of the country's rural areas and their populations. However, the project may well suggest ways in which its benefits can be transferred or extended to other areas (or perhaps social groups); M&E should include some exploration in this direction.

- d. *Possible Selection Bias:* The selection of *raions* and villages for consultation was based on high poverty incidence and high food insecurity, i.e. on socio-economic criteria rather than water infrastructure (in)adequacies; there is a risk (intensified by the fact that only some WUAs will be chosen for funding) that the implemented Proposal may fund more educated, vocal and organised localities (with perhaps excellent results) rather than more "difficult" locations where the need (socioeconomic or agrotechnical) is greater.
- e. *Corruption:* This was not mentioned explicitly in consultation with international bilateral and multilateral agencies (or in the Proposal, though "transparency" is mentioned). However, it was raised in consultation as a possible problem by some (Kyrgyz) NGO representatives, and is generally thought to be a major problem in public funding (including from external donors) in the Kyrgyz Republic (as in some other countries)¹⁴. The different components of the Proposal will pose very different corruption opportunities, from mis-awarding of large engineering contracts to inappropriate and possibly illegal use of small-scale salaries and expenses. The different PIUs (or sections of a single PIU, if decoded upon) must be alerted and monitored with this in mind.

¹⁴ See data from the U.S. Heritage Foundation at http://www.economywatch.com/economic-statistics/economic-indicators/Freedom_from_Corruption/, accessed 29 March 2012.