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PARTICIPATORY WATER GOVERNANCE: LESSONS FROM THE FERGHANA VALLEY

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Introduction

Land reforms in Central Asia following dissolution of Soviet Union has led to the emergence of numerous medium to smallholder farmers, thus, putting the government-run and administrative (district and provincial) water departments under immense financial and institutional stress. The Ferghana Valley is densely populated region that occupies about 79,000 km^2 of land. In late 90's land reforms in the region led to the emergence of numerous small private farmers, putting the government-run and administrative district irrigation departments under colossal institutional stress. The situation caused conflicts, inadequate allocation of water, environmental problems and social imbalance. These issues in the Ferghana Valley were addressed by IWMI/SIC and its partners with the immense support from SDC promoted institutional reforms at main canal level. The paper discusses the IWMI/SIC project impact adopted into the local context and its impacts. Reforms were complemented by the developed comprehensive social mobilization approach to establish bottom up water user associations; unified canal management organizations along hydrographic boundaries with water users playing a major role in canal governance. The field trials have identified potentials for improved water and land productivity at plot level.

Background

The Ferghana Valley is framed by the Ala-Tau and Alai mountain ranges and occupies 70,000 km^2 of territory with the highest density of population (250 habitants per km^2) and best productive agriculture (See Figure 1). The valley is shared by three countries – Uzbekistan (4.2% of its area in the Ferghana Valley), Kyrgyzstan (39.9 %) and Tajikistan (18.2 %).

The average temperature in the valley is 13.1°C, ranging from -8°C to 3°C in January and 17°C to 36°C in July. Annual precipitation ranges from 109 mm to 502 mm whereas evaporation ranges from 1133 mm to 1294 mm throughout the Ferghana valley. The long–term (1970-2000) average annual precipitation for the South Ferghana Canal (SFC) command area is 175 mm. During the study period (2003-2007), precipitation rates were mostly higher than the long-term average, with the highest value of 330 mm in 2003 and the lowest of 150 mm in 2000.

The total population is about 10.5 million which is about 1/5th of the total population of Central Asia. These countries are still in the process of transition. The land reforms following the disintegration of the Soviet Union led to the emergence of numerous small private farms, thus, putting the government-run and administrative district irrigation departments under immense organisational, institutional and logistical stress. The situation caused inadequate allocation of water and environmental problems. As a solution to these issues, the project designed and promoted institutional reforms to foster request oriented water allocation and facilitated water users to take

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part in water governance at different levels. The project has established user driven organizations using a comprehensive social mobilization and institutional development approach.

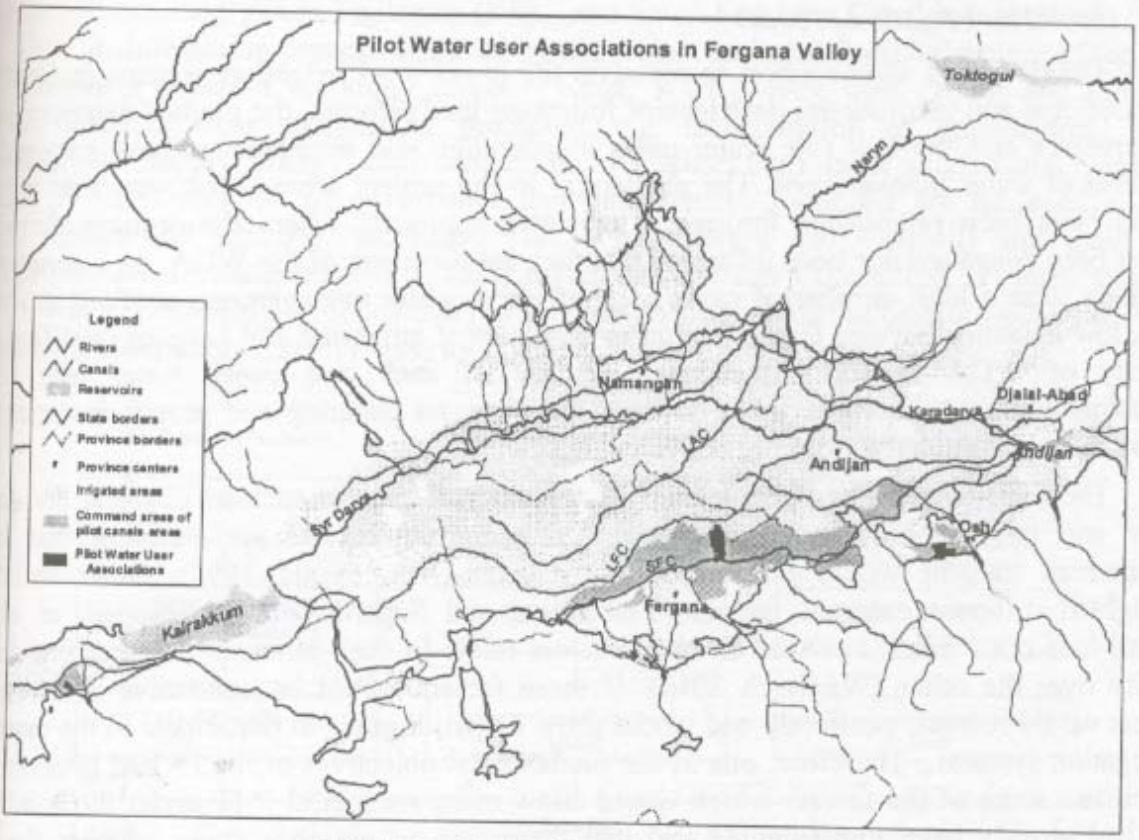

Figure 1 - Map of the Ferghana Valley

The initial studies under the project titled Integrated Water Resources Management in the Ferghana Valley (jointly implemented by IWMI and SIC-ICWC and supported by SDC) had observed the institutional gap between the WUA and farmers. Consequently, an effective partnership has been created involving local water specialists from the relevant ministries, basin irrigation system organizations and provincial water management authorities of the countries sharing the Valley – Kyrgyzstan, Uzbekistan and Tajikistan. The main challenge faced was "what are the alternative solutions that would allow farmer communities to mobilize the financial, in-kind and other resources such as participation, active involvement to support complicated water management procedures, governance of WUAs, gradual infrastructural improvements and increase financial self-sufficiency?" The innovative solution to this challenge was establishing effective, democratic, participatory, user driven grass roots organization of farmers, e.g. water user groups (WUGs) along tertiary and below level canals.

Introduced reforms

The initial studies found that 1) the state support for irrigation system maintenance, particularly the lower level canal systems was declining in Central Asia; 2) the increasing number of farms due to land reforms was leading to an institutional gap in water management (Ul Hassan et. al, 2003); 3) inefficient water management practices were keeping the land and water productivities below potential. The project addressed these issues by promoting institutional reforms to foster request oriented water allocation and participation of agricultural water users (Dukhovny et al. 2008). These principles were tested in three pilot canals of Ferghana Valley. The project has established unified hydrographic canal management organizations to manage water along wider hydrographic boundaries, created WUAs using a bottom up social mobilization approach (Ul Hassan, 2003) and determined the potential for land and water productivity improvements (2003-

2005). In 2005-2008, the project consolidated and generalized the adopted principles and carried out extensive capacity building, training and dissemination campaigns for wider dissemination.

Social mobilization process

The declining state support to maintain the lower level irrigation systems in Central Asia, organisational and institutional deficiencies following land reforms, the gradual deterioration of the infrastructure and the low role water users in operation and maintenance have exposed serious problems of water management. The challenges in the project areas faced were that most of the WUAs have been established through a top-down approach, where the ordinary farmers have neither been consulted nor been informed that they are members of the WUA. As a consequence of this there were a high number of cases of: ineffective water management, conflicts among water users, low irrigation service fee collection rates, issues of attracting and keeping qualified staff, no capacity of WUA to fulfill the water request of each and every water user, no legal obligation/contract with water users on water delivery, no planning and proper documentation as well as debts accumulated from old collective farms.

The experiences elsewhere suggest if the external factors such as physical and technical, policy and governance as well as social and economic factors are enabling that irrigation management transfer would be successful (Meinzen-Dick, et al., 1995). Other authors have highlighted different external factors (Vermillion, and Sagardoy 1999, Huppert, et al. 2001). Overall it is not evident how the different factors relate to each other, or whether one factor has priority over the other (Wegerich 2010). If these factors would be conducive it is argued that farmers would respond positively and would show the willingness to participate in the management of irrigation systems. Therefore, one of the fundamental objectives of the IWRM intervention was to facilitate some of the factors which would allow more successful IMT under the condition that IMT had already been implemented and that there was no previous study whether the external factors were conducive to IMT within the project area. During the project water users took over the full responsibilities over secondary canal systems through participatory WUAs and shared the responsibilities with the state to govern main canal systems.

For this IWMI has developed the Social mobilization and intuitional development method (SMID). SMID is a process, through which stakeholders are involved as key decision makers for water management (Ul Hassan et al., 2003). Through mobilization, farmers understand that they are establishing participatory organization for their own collective benefit and that this organization will be accountable to them and will work for them on their agreed rules and locally appropriate procedures that are generally accepted by all farmers. Mobilization process starts from the understanding the needs of the farmers and problems in water management that are later engaged in dialogue for collective action to improve water management by trained SMID staff. The key focus of SMID activities were establishing and further developing of hydrographic WUAs and canal organizations – that are self-governing, self sustaining and self managing. Thus, the SMID approach was designed to serve the solitary purpose, which was to develop user driven organizations through several constituent steps (awareness building, diagnostic analysis, consultations, election of representatives, initiative groups, founding documents, training, registration and further strengthening through intense capacity building), with the aim that these organizations deliver water to its water users in equitable, reliable and timely manner. For effective SMID impact the project used innovative knowledge sharing tools as facilitation of informal network of WUA leaders around pilot WUAs; farmer to farmer days; experience sharing tours to active WUA leaders and SMID team members.

Achievements

True integration

The project specialists in close dialogue with stakeholders worked to define and discuss alternative organizational structures of water management at the main canal level. Regular

participatory training workshops and socioeconomic surveys organized by the project provided new opportunities for a broad involvement of water users in the reform, e.g. building a new alternative to the existing system of water management (See Figure 2) for pilot canals – Aravan Akbura in Kyrgyzstan, Khodjabakirgan in Tajikistan (KBC) and South Ferghana Canal in Uzbekistan (SFC).

Thus the integration process achieved by the project included i) establishment of the vertical linkages between different hierarchy levels – canal, WUA, water user groups and farmers; ii) horizontal linkages were additionally promoted, e.g. incorporation of inter-sectoral interests (industries, water supply, energy, environment, municipalities etc.) under single canal management organization; iii) separation of governance and management functions are achieved at tertiary (WUGs: mirabs and leaders), secondary (WUA: directorate and Council) and main (Canal organizations: Canal management organization and Canal Water Committee; iv) integration of all types of water (including groundwater) and uses in the water allocation planning through Management information system (MIS) tool were also introduced in pilot canals;

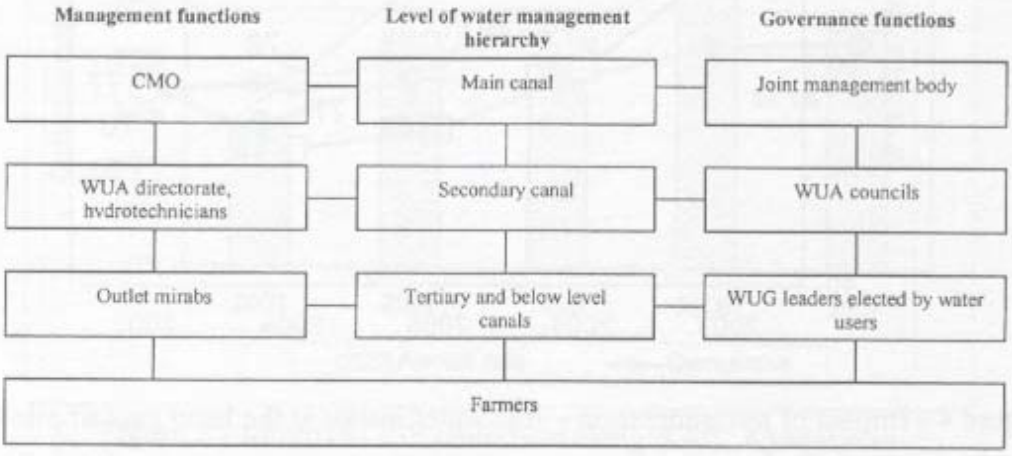

Figure 2 - Established structures – greater public participation

Joint governance

When the project started the institutional reforms which were implemented in the three countries limited public participation in irrigation management to secondary, tertiary or on-farm irrigation system level. The project has achieved a relocation of responsibility of the state to govern canal jointly by state and water users and brought water user's influence a step forward. Through a social mobilization campaign facilitated the identification and involvement of all key stakeholders in the governance of these canals (water users, local governments, water management organizations, NGOs, industries etc.) and in setting up of joint public governing bodies (Figure 3).

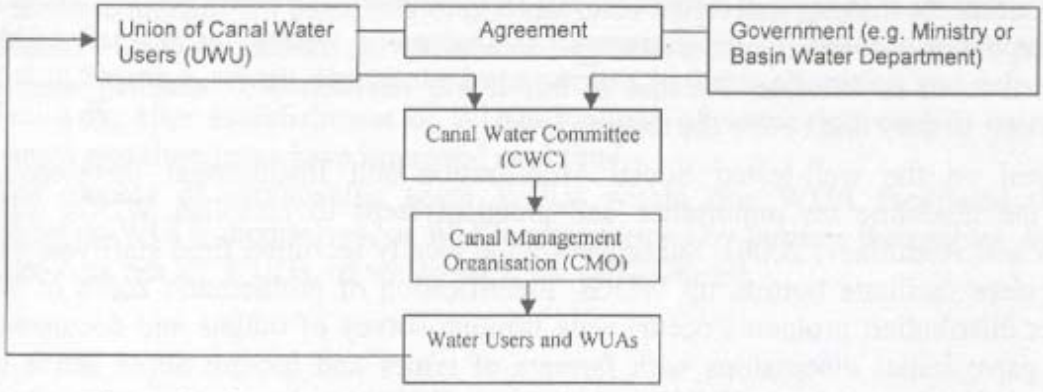

Figure 3 - Governance over canals through joint state-public body

To set up these joint public governing bodies was an important water management intervention, which was introduced in the region by the project. Although the status and mandate of

these public governing bodies are still under discussion, it puts the principle of user participation one-step higher in the water resources management hierarchy than what was previously established.

Figure 4, depicts the impact of these reforms in terms of water abstraction by the canal (shows the percentage of the water intake compared to intake in 2003, taken as 100 %). According to Manthrithilake (2008) the 100 % taken in SFC in 2003 was reduced by 39 % by 2007. A similar positive result can be shown for KBC and AAC on average – 23 % and 28 % respectively. Although, there are some researchable questions: What is the impact of rainfall; human and natural water availability within small rivers, or the conjunctive use (drainage water, groundwater, side inflow of small rivers and return flows).

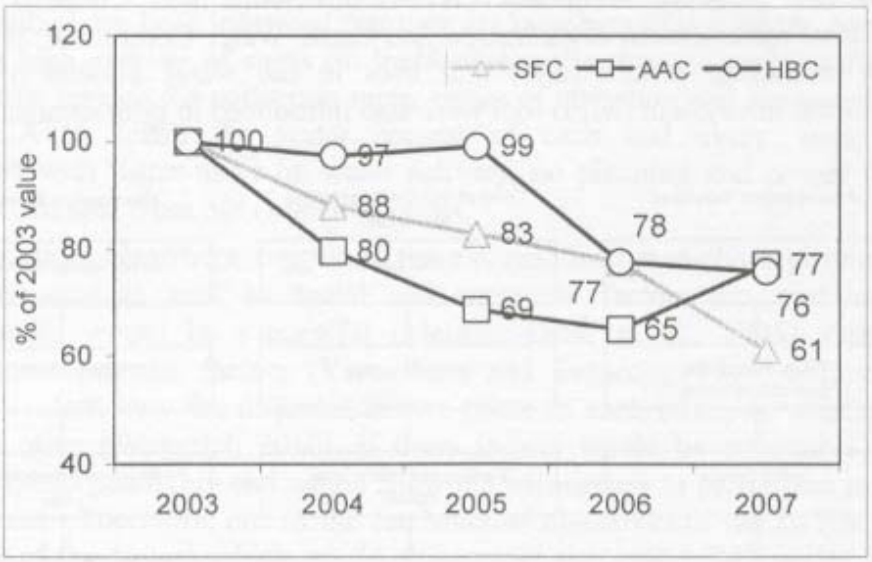

Figure 4 - Impact of reorganization – less water intake at the head gate of pilot canals

Figure 5 presents the impact of the reforms on the irrigation service fee collection (ISF), along Aravan Akbura Canal in Osh province of Kyrgyzstan. The trend suggests the gradual improvement over the time and in 2007 the canal management was able to collect 88 % of the target amount of fees. Arguably, it still has not reached 100 % and the targeted fees did not contain information about main assets, which WUAs are still trying to integrate into their budgets, also there are questions related to the maintenance – is the given figure only including staff salaries or also maintenance and repair works etc.?

Facilitating WUGs

Particularly in the cases of very small land holdings of farmers (such as in Kyrgyzstan, Tajikistan and for kitchen gardens in Uzbekistan) the task of water distribution is difficult and the transaction costs for making individual contracts and to guarantee the fulfilment of the contract are high. Hence, the project anticipated a strategy for reducing the transaction costs – to make the WUA organisations more sustainable. Because of this it was envisioned to establish water user groups (WUGs) along tertiary and below the tertiary level.

Based on the well-tested Social Mobilization and Institutional Development (SMID) approach the guideline on importance and practical steps to establish WUGs was developed (Kazbekov and Abdullaev, 2006). Subsequently the locally recruited field staff was trained on the following steps facilitate bottom up WUGs: identification of problematic zones of WUA, where most water distribution problems occur; walk through survey of outlets and documenting the key structural gaps; initial discussions with farmers of issues and inquire about active water users; presentation of basic concepts of WUG and its role in WUA development; meeting with water users to elect WUG leader; follow up and training activities. To complement facilitation of WUGs the project commenced the support of WUG initiatives to improve irrigation structures. The key objective was to facilitate farmer participation in identifying disadvantaged infrastructures, designing and constructing process with minor non monetary support from the project (providing

resources, means and materials) and major input from water users (in-kind, labor, local construction materials). The criteria for the identification of needs for infrastructural improvements were that the structure would have to in the most severe conditions, the structure would have to serve several WUGs or different user groups such as rural communities (mahallas) and farmers, farmers that are under the command area of the structure had to be willing to take active part in improvement, and farmers that are applying for competition had to present the support from associated WUA and rural community members.

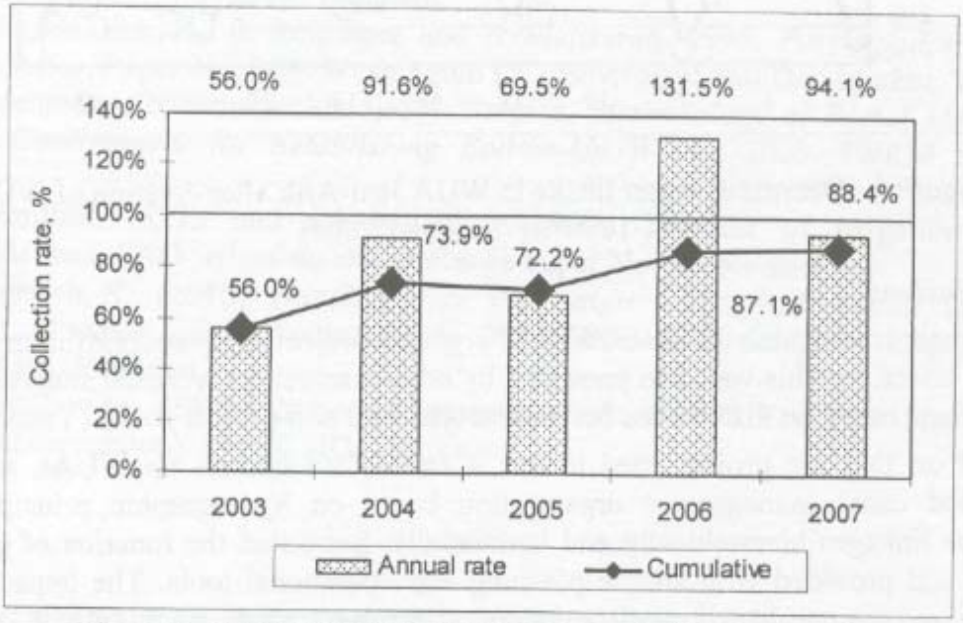

Figure 5 - Improved ISF collection along AAC, Kyrgyzstan

Impact of WUGs

The support of WUG initiatives resulted in

1) that the WUA services could reach all farmers by decreasing the transaction costs of the WUA. For example in WUA Joypas (Kyrgyzstan), 22 WUGs were established where most of them were self initiated, 22 WUG leaders became members of WUA councils and govern the WUA. Now WUA signs water agreements with only 22 WUG leaders instead of 879 water users and WUA hydrotechnicians deliver water to only 22 WUG leaders. It also improved the ISF collection, which is now 100 %.

2) increased confidence of WUAs to mobilize its own resources and of water users that there would be gradual infrastructural improvements and

3) brought greater sense of ownership over the structures; decreased the number of conflicts by 20 % (Abdullaev et.al., 2006); increased the operativeness of water management. This is demonstrated in Figure 6, which depicts the improvement in water allocation and delivering water in WUA Jani-Arik, after establishment of WUGs (volume of water delivered to unit area). The adequacy, equity and timeliness have improved over time.

4) The success of establishing some WUGs within one WUA facilitated that WUAs continued to set up WUGs themselves, or WUGs were formed by farmers themselves. For example the WUA Jani-Arik has 27 WUGs, of which 70 % are self-initiated.

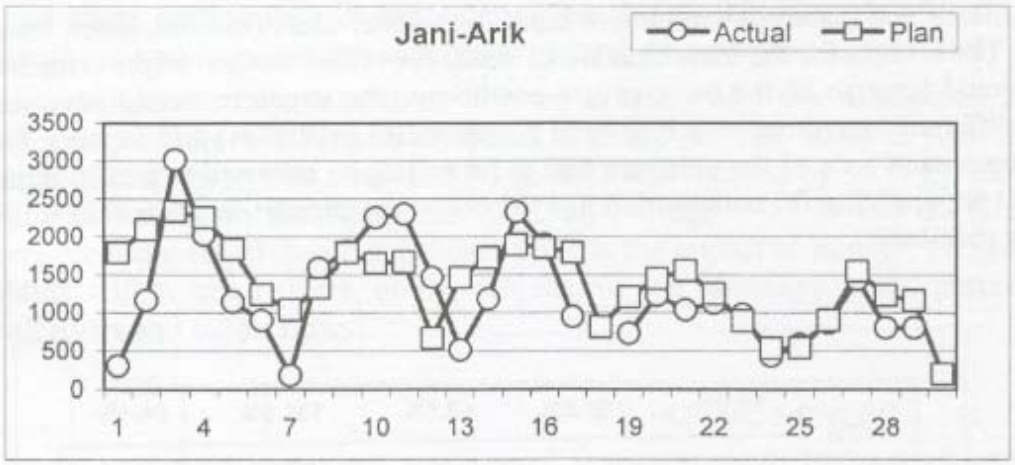

Figure 6 - Decreased water intake in WUA Jani-Arik after creation of WUGs, 1000*m^3/ha (2003-2006)

Conclusions

The main conclusion is that IWRM-Ferghana project was successful in making water management effective. This was also presented by other researchers were the analysis has identified a range of effects based on differences between project and non-project zones (Yakubov, 2010).

Based on that the project tried to test – established bottom up WUAs, trained farmers, formed unified canal management organization based on hydrographic principle and finally introduced the linkages hierarchically and horizontally. Separated the function of governance and management and provided with simple planning and operational tools. The impact shows that it sharply decreased the number of conflicts among water users, eased situation with delivering water to the tail parts of canals outlets, increased the ability of water organizations organizational capacity to make stable, equitable and fair water delivery service.

The WUGs are an institutional base for introduction of timing/rotational-based water payments within the WUG and could lead to more equitable distribution of water. WUGs are the key in WUA governance specifically for Kyrgyzstan and Tajikistan with many small farmers as well as Uzbekistan when it concerns the Mahallas.

The project experience suggests that the little investments into the organizational reforms of water sector gives high returns, improved water allocation, water conservation and economic and financial sustainability.

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