



# Water user associations: The key for water resource management

The Jordan Valley, Jordan



THE REGIONAL KNOWLEDGE NETWORK ON WATER - RKNOW



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## Summary

The irrigation water has been a major issue of concern in the water sector for many years particularly in the Jordan Valley, where there has been a pronounced competition on water resources among the user associations: agriculture, domestic, and tourism. Despite the remarkable efforts of Jordan Valley Authority (JVA) in managing the bulk water, the irrigation water distribution system had undergone a major challenge.

The case eventually resulted in a sharp fall in the operation as a whole in the late 1990s, where so much of the efficiency in retail water management was lost, farmers became distanced from each other and had negative attitudes towards the authority (JVA). Drought years made the situation even more stressful.

To reclaim the situation, a sustainable operational system had to be implemented based on the involvement of the parties concerned, namely the farmers and JVA. In this way, it was understood that both parties would shoulder the responsibility. Among the options considered, JVA selected the **participative irrigation approach** as a strategic option for improving the efficiency of irrigation water management, this came in-line with the governments' future approach.

The idea was very challenging to a system that reached a deadlock. Therefore, many activities of ice breaking and rebuilding of trust and mutual understanding points had to be undertaken. The program even included contributing in technical support in terms of reclaiming the network and providing the know-how to help farmers move to a better position of efficiency and a fully cooperative mode.

The implementation started at the small level in 3 pilot areas (north, middle, and south). After trust was built in these areas using participatory approaches, water user associations were established, and a democratic process was used to select members and thereafter the management structure.

The work on forming water user associations was not easy; many difficulties and challenges had to be overcome. Yet when the concept was implemented, it resulted in a number of success stories and positive impacts. For example; many farmers reported that they have **improved productivity** due to **availability of water** on regular bases according to the irrigation program. The illegal use of water dramatically reduced, thus fair water distribution was achieved.

WUA and JVA established a partnership for the efficient water use in irrigation. The WUA became recognized by JVA and contracts were achieved with the water user associations resulting in better ownership. The associations became responsible for the distribution of the water for irrigation. However, to ensure the sustainability of the experience for the long term, a bylaw will be set in the near future to govern the holistic relationship among the WUA, JVA and other stakeholders. This is expected to happen through the establishment of a federation for the WUA and a corresponding unit at JVA.

Based on communications made with many members and leaders of the WUA, it is then realized that WUA are very satisfied with the results, they even recommend future generations and any other farmer communities to board the participative approach.

The concept is based on **fairness**, and meets well with the traditional approach and religious principles for water management. That is why today; more than 3/4 of the Jordan Valley farm units joined WUA; **full coverage will not be too long now...**

## Introduction

The Jordan Valley was always called the “vegetable basket of Jordan”. This status, however, was challenged along the years by the continuous stress on water resources and the availability of water for agriculture. The municipal and industrial water needs were somehow being met on the expense of the water available in the Jordan valley for agriculture.

To revive the Jordan Valley’s agricultural performance, several programs were implemented, that led to the establishment of the Jordan Valley Authority (JVA) in 1977. JVA was then mandated to manage the resources and the socio-economic development of the valley (including its water resources). It has the sole responsibility of the water supply and the irrigation water distribution for agriculture.

JVA achieved great success and showed an excellent model in the management of bulk water, but retail irrigation water distribution faced a gradual decrease in efficiency, due to several factors such as; maintenance cost and the deterioration of the network.

As a result farmers lost faith in the efficiency of the operation led by JVA, and therefore assuming that JVA only, had the duty to reclaim the situation.

Mistrust over the years, led to the lack of cooperation among

farmers themselves to tackle the problem of water resources availability. JVA was gradually overwhelmed with bureaucratic processes and the lack of resources to manage the situation. This eventually led to jeopardizing the agricultural performance in the valley on one hand, and deteriorating the retail water distribution system on the other.

In 200, following severe droughts and therefore cuts on water for agriculture, JVA called for serious plans to reclaim the situation and to revitalize agricultural performance. JVA stepped in to introduce a sustainable participatory approach for water resources management for irrigated agriculture. The goal was increase efficiency for irrigated land in the Jordan Valley.

This initiative was also coincided with the amendment of the JVA law for the purpose of improving efficiency and cost effectiveness of JVA management. The change in the law resulted in aligning much of the socio-economic development duties and responsibilities to the concerned ministries, while JVA became more focused on water management and distribution among some other duties. The development of the JVA mandate, the project and the need for farmers to feel change, provided a fertile - though challenging - ground for the project.

The project adopted farmers’ participation in water distribution management through forming water user associations (WUA). It was known from the beginning that this will be a long process and will require a stepwise approach. In early stages between (2003 - 2004) success indicators were set to be accomplished by the end of 2009. Three major indicators found below helped the process be complete.

- The Membership of farmers in WUA will cover 40% of all irrigated area in the Jordan Valley;
- Founding documents of a federative organization representing regional interest of water user associations in Jordan Valley are signed; and
- At least 60% of members of WUA are, according to a survey, satisfied with water distribution services.

Action plans to build awareness on problems and potential solutions, regaining mutual confidence (between the farmers and JVA and among the farmers themselves) were produced. Organizational structure development and technical improvements for the water distribution system was also aimed for. Different steps and phases were taken to make this a reality.



## Farmers Participation via Water User Associations

The concept of managing irrigation water by farmers used to be practiced in the past; long before the formation of the JVA. That was traditional practice; a small community of farmers would have a source of water, the user associations got together and managed the use of the resource according to social traditional control systems. In fact the concept reflects shared ownership, interest and thus responsibilities towards optimum performance. It illustrates **good water governance** and leads to openness, mutual trust and confidence among the farmers groups and between the farmers and the authorities.

With more sophisticated agriculture, involving technologies for water irrigation distribution that include high pressure pumping and the associated maintenance, it became imperative to have a more organized form of farmers management group (the WUA). It was also necessary that irrigation water distribution be tied to allocation (taking into account the

farm area and crop pattern) rather than allowing certain a time for water supply.

This then urged the need for ground management groups i.e. the WUA.

In this case, WUA in the Jordan Valley are classified to three progressive levels in terms of their status:

- **Water councils:** They are based on traditional mechanisms of problem solving. Water councils are recognized by the JVA. Each council would have 15 – 20 elected farmers chosen through prior informal discussion with the concerned farmers. The interesting aspect is that the government is represented through the sub-governor (Al Mutassarif) in the water council. Thus the council has executive power. Al Mutassarif may even chair the council.

- **Water user committees:** They are also based on or similar to the traditional form of farmers' management that existed before the formation of JVA. A water user associations committee is a

group of representatives of farmers elected by the farmers in a general assembly after several informal meetings. Although the associations have no legal status as such, they are recognized by JVA; normally a letter is issued by the JVA Secretary General in this respect.

- **Water user Cooperatives:** They are the type of associations that have legal status. Cooperatives follow the Cooperation Law No. 18 / 1997 and thus they are affiliated to the Jordan Cooperative Corporation JCC. Cooperatives must have their internal regulatory system that specifies the objectives, capital, membership procedure and financial and administrative issues.

It should be noted that up to the date of issuing this document, JCC was the only available way to register water cooperatives. However, the project has taken the necessary steps to prepare for the bylaw in cooperation with JVA in 2010, by then the registration of the WUA will become governed and a well clarified process was established.

## The Process Adopted

To make this change possible in managing water resources and to reach a participatory approach leading to the formation of the above forms of water user associations, a dedicated (open, transparent and flexible) process had to be in place. At the outset the project prepared for a comprehensive understanding of the local issues including traditions, socio-economic aspects and the problems and difficulties facing the farmers. This was done through a series of meetings among the project team, the farmers and JVA, of key issues and problems that were facing the farmers. Some of these issues are listed below:

- Unreliable supply of water both in quality and quantity due to lack of planning, stress on water, lack of proper management system, and lack of efficient maintenance;
- Lack of efficiency of some JVA water distribution staff and the support to farmers to meet their needs;
- Competition among farmers on water leading to bad practices like illegal connections and abstractions, thus affected trust among farmers;
- Competition and mistrust between the small farmers and the influential large farmers;
- Demand on water for other uses such as the tourism sector in the Jordan Valley (JV) that would also compromise the allocation for agriculture.

Furthermore, during the initial phase of attempting to form water user associations groups, a survey by a hired social studies expert was done aiming at understanding the opportunities and constraints on farmer participation. The result of the study had shed light towards next steps to be taken, and the ways and means to handle issues taking full consideration of the social dimension. The study revealed that:

- There existed a potential (even though low) for farmers to accept each other; thus farmers had to be subjected to training and offered initial support to participate more actively.
- The farmers had great demands and wishes from JVA to reclaim the situation and grant efficient water management. However, they also had the understanding that JVA had to undergo a reform and water user associations had to have a clear role in water management.
- The farmers were also aware of the urgency of having legal status for the water associations.

They also were demanding for capacity building and incentives.

Based on the above and since mutual confidence was mostly lacking, the project took priority to rebuild trust among the farmers, the project team and JVA also ensured that change is doable.

The project cared to respond to the problems facing the farmers in

a structured approach. The project included activities to contribute to technical upgrading efforts; these included providing equipment and facilitating maintenance work to the water distribution network in a speedy way. Awareness raising and human resources capacity building were also a major topic. A number of workshops were held in the associations to advance the level towards the sought better management of irrigation water via participation,

The workshops covered:

- Farmers participation in irrigation management;
- JVA and water user associations groups communication workshops; and
- Joint JVA – farmers – water user groups project planning workshops.

The participatory approach was demonstrated by sharing experiences from other countries and associations. Field visits were conducted to associations in the south of Jordan, where the participatory approach through water associations have been in place for a long time. As some farmers were still hesitant to board on the more serious and committed participatory approach and in order to boost the level of belief in practice as well as to share knowledge, the project planned and executed technical visits to Syria, Turkey and Egypt. Strong water user associations have been a successful practice in these countries, and what was

interesting, on the other hand, was that farmers covered their costs for such visits and participated a great deal in the technical upgrading work. Thus such activities were not solely donor driven, but they were reflections of the farmers interest and commitment.

To further demonstrate commitment to the participative approach, the project facilitated mutual planning meetings with the participation of the top management of JVA and the farmers. All of the above activities along the time of the project led to successive built up of personal capacity and knowledge, worthwhile confidence and ownership to working together to solve problems.

When the project gained the support of the farmers and of course JVA, it started to boost

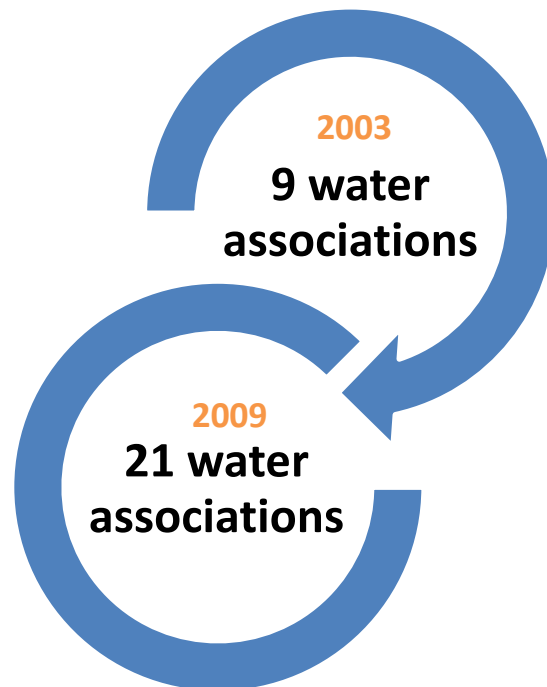
work on forming a suitable shape of water associations in the pilot study area in the north, middle and south of the Jordan Valley.

To formation such water groups, routine and subsequent meetings with the farmers were undertaken to initiate the process. The scope was developed by the farmers, members of the WUA were identified, and the leaders of the WUA were selected by the members.

By the first phase in 2003, the work resulted in forming 9 water associations (6 communities, 3 councils, and 1 cooperative). Progressive work on the water associations and based on the success, more water associations were formed reaching to 21 associations by October 2009.

The progress was advanced by ensuring a parallel effort being given to the issue of legal status.

The project in agreement with the JVA managed to secure recognition to the established communities upon proving good intention to work in a structured manner. The project worked with JVA to have legal status and a certain form of power for the water associations. The water associations, depending on performance, get to a level of transfer of tasks (for retail irrigation water distribution) from JVA, whereby the responsibility becomes shared. In other words, the WUA are very respected by JVA and are looked at as the outsourced private (non-for-profit) community arm to guarantee proper services to the associations with regards to irrigation water distribution.



## Challenges and Difficulties Faced

Certainly handling historical disparity and mistrust accumulated through a number of years and creating change of attitude, behavior and management would not be easy. The project faced many difficulties and challenges that can be summarized as follows:

- Mistrust, resistance of farmers to this change. For example the farmers in the beginning had doubts about the intention of granting transfer of tasks; they thought that JVA would not do it.
- Severe shortage of water resources (in addition to the change in quality) and the diversion of much of the fresh water to Amman for drinking purposes made the farmers believe that irrigation will always be a second if not third priority.
- Influence of large farmers was also seen by the associations a challenge that had to be overcome. The influential farmers might prefer

to proceed with business as usual, as they had their own ways to obtain sufficient amounts of water.

- Absence or lack of adequate legal framework for the farmer's participation in irrigation management. Since there was no legal framework, the farmers and members of the WUA felt insecure about the future of the WUA and the operation of the task transfer.
- Worn out supply and distribution network. The network suffered high leakage in addition to much of illegal connections; these were coupled with the disability to perform maintenance to the network. Reclaiming the network and ceasing the illegal connections were a challenge. First because of the high cost imbedded and second for the need of taking courageous steps to stop the large number of illegal connections.

Mistrust coupled with resistance to change, shortage of water

resources, effect of influential farmers, absence of a suitable legal framework, and worn out water distribution network were the key challenges and difficulties faced the development of participative irrigation.

Difficulties were solved and challenges were overcome by opening endless dialogue and a track of openness and understanding between one and another. The mistrust was leaned first by meetings and opening a room for discussion, then the participation was developed further by sharing developing the concept and the planning process; a sort of partnership was thus seeded. The technical needs were responded to in a speedy way to furnish the farmers with some of their key immediate aspirations such as reclaiming some parts of the irrigation network, providing information on modern techniques in irrigation management and best practices in agriculture.



## Success Factors, Stories and the Achievements

Whats absolutely unique about the project was that it followed a bottom up approach; the ideas were extracted from the field i.e. from the farmers as they are the affected party and the future beneficiary. The approach was worth the trust generated along the march of the project.

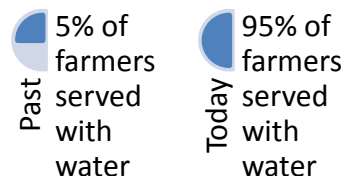
The JVA backed by the project has also respected the status of the new form of water management entities and went for recognizing the successful ones in appropriate times. These were not to be accomplished without the commitment of the JVA to change, wise management at the project level and the readiness and willingness of the farmers.

The remarkable achievement is illustrated in the successive propagation of the adoption of participative irrigation approach; in 2009 it can be said that more than 75% of the irrigated areas are covered by WUA. This reflects the success, fairness of the approach and the satisfaction of the farmers from this experience.

Farmers' satisfaction reached high rates, today 95% of the farmers are well served with water while in the past only 5% were benefiting.

The approach resulted in direct savings of water resources. A good example is given in Al Kafrein area, where the community was able to optimize the irrigation scheme, reduce leakages and illegal connections to the network, and

thus reduced the water released from the dam to the network from 12000 m<sup>3</sup> / day to 6000 m<sup>3</sup> / day. This was achieved only in 2 months after handing over the water distribution task to the WUA. The WUA of Al Kafrein also pointed that the proper management of water enabled them to withstand and manage their farms even with less amount of water in the dry seasons.



According to information from the field even if the main supply pipe valve was open, the consumption by the farms was within the ordered allocation. This reflected the cooperation of the farmers as well as the importance of having good control by the WUA. The endeavor led to reaching fair and equal distribution of water and after all improved efficiency.

In fact the continuous engagement in participative irrigation management built up valuable experience and progressive mutual belief in the ability to change. The developed experience at the WUA and project levels led to having some WUA able to meet and go over challenges in remarkable times. The project in Al Kafrein gained success in very outstanding short time. After working as a water council, it formed a cooperative in November 2006, then

the transfer of tasks was achieved in February 2009, although it was one of the areas that suffered very much of illegal water uses and almost completely damaged irrigation system .

The associations reported that their farms productivity has undoubtedly increased as the water became available in a systematic way; the plants were irrigated according to the set schedule. In case of trouble shooting in the system, the problem was reclaimed immediately and so the farmer did not miss the turn in irrigation. In addition, the availability of a reliable irrigation management encouraged farmers to expand their farms areas and some to invest in farming business. The approach was sort of contributing in rebuilding the trust in the agricultural sector in the valley.

The approach also resulted in raising the level of participation, this was expected though as the project was about participative irrigation. An important aspect, however, was the level of democracy gained throughout. The farmers became responsibly democratic; they express their views and call for their needs in a professional way. The communication and management skills have also been improved. The associations' members are now able to present their activities to the public and key figures in the society in a professional manner. The associations even care to run the meetings efficiently; they respect

time and they prepare agendas and minutes or meetings records.

Women role received respect in the participation. In some associations women role was well pronounced; as women farmers were present in the communities covering their areas. Thus ensured equal rights for women participation (in this case) in irrigation management. In fact the committee in the North (WUA 33) comprised 205 members of which 13 were women farmers (7%).

The associations have also indirectly benefited from the awareness on the water situation, strategies and demand management. The farmers confirmed their knowledge in facts and figures and became more powerful stakeholder on water management and sustainability.

The regional technical visits (info-trips) were beneficial not only from pure technical aspects but also in getting all the WUA members together. This created an atmosphere for cooperation, exchange of ideas and business practices. This by itself improved the performance of the farmers and allowed collective thinking.

One marvelous feature of the experience was the readiness to volunteer for the sake of community service. This was common among many WUA. The level of dedication paid back positively on the image and reputation of the communities. Indeed volunteering time and effort is a sign of the success the participative approach reached.

On the other hand the approach has resulted in a better image for JVA. The support given by the JVA was eventually well appreciated. Management support was also a key element for WUA to succeed. The mode of work in a participative approach was like a partnership for one goal. The WUA have now direct access to the Secretary General of JVA and his deputies. Their requests are well considered and they are respected as strategic partner in the water distribution management.

A major element for the success of the endeavor has been the proper project management by all parties and the dedication of staff and WUA members. The project staff was in a regular communication with the farmers, they are actually stationed in the field; this by itself meant a lot to the farmers. The farmers and WUA felt the support intended to improve their situation and sustainability. The JVA management (adopting modernized approach with long term vision) has also contributed to a large extent in making a change. The support of the directors in the JVA was crucial. The farmers developed a tying relationship with the team of management. The appointment of deputies to the Secretary General for the North, Middle and South Jordan valley was indeed a wise step to ensure availability of high level decision makers, thus contenting speedy actions in a semi decentralized management processes. This contributed to positive impacts on the farmers and WUA confidence in the future.

It was learnt that the change shall be made by a step by step approach.

This was illustrated in the different phases and activities undertaken. Throughout the road from disparity to unity, many actions for breaking the ice, bridging the gaps, developing mutual trust and confidence were imperative. Such activities included general assemblies, workgroup, brainstorming and planning sessions in addition to one to one meetings to handle problems and difficulties. All of these were found useful and effective.

Then the facilitation of technical support was a vital tool to furnish the confirmation of reliability and good intentions of the initiative. The formation of the WUA in a democratic approach and consultative procedure together with granting the recognition to the WUA to empower them in a timely manner were successful strategic steps. The change from complete reliance with negative attitudes and perceptions to full task transfer formed a print of success for the cooperative work.

Another positive aspect of the project was that the participation was not limited or restricted to any form of social level or background. The coverage was comprehensive; participation was among small and large farmers, rich or poor and of mixed origins. They were all interested. For example in WUA 55 (middle), the investment in farms is high and the revenue is very rewarding; the farmers have connections to the international markets and manage to export a large part of their produce. Yet the participation in the WUA was one of their interest and they committed to the good work. Of the lessons learnt

reported by the farmers and members of the WUA, the following were most striking:

- Communication, cooperation, and know-how exchange are imperative for sustainable farmers. This was most prominent as the farmers benefited quite well from the capacity building activities including the workshops and the field visits in Jordan and abroad. The farmers in the valley now learn from each other and help each other.
- The support of the authority is vital. The farmers started the road of participation with mixed feelings - and to some extent fears and doubts - as they thought that the authority would not be serious and supportive to this proposal. The JVA, with modern management approaches, on the contrary worked in so much favor of the participative irrigation management. Indeed the farmers valued such support. They changed attitudes and appreciated the position of JVA. Though for JVA, the matter was so crucial; participation was the available strategy for improvement. The story of

participation became a win-win situation.

- The team work is the way for handling the problems. Many problems faced the farmers in the past, while no one could make an impact for a change, because of the individual approach that most of the farmers practiced. It is now well appreciated that no one would necessary listen to individual request or arrange services for singled cases. As stated by the farmers, acting together was the detrimental factor for success.

The lessons learnt were part of a continuous learning loop fed into the institutional set-up procedures of new associations. Learning by doing and utilizing the experience gained in developing the new WUA, or the new contracts, or the management structure of the WUA were all examples of how the team became resourceful and efficient. This well structured approach led to having more than 75% of the irrigated areas of the Jordan valley covered by WUA and many WUA are now granted transfer of tasks and are operating in a successful manner.

A unique thing about the project management is that it did not choose the easy ways just to document success; on the opposite they challenged the most difficult cases. Some WUA were established in the most difficult areas where so much of inefficiencies and troubles in irrigation water were existing such as the case of Al Kafrein. The WUA there holds now one of the top records of success. Again this had a great impact about the capabilities of the project, the effectiveness of the participative irrigation, and even encouraged other associations to follow the track.

The WUA proved also good internal governance and learning process. Some WUA leaders were happy to chair the association due to the sought prestige and societal position. However, when this was not accompanied by real actions taking and improving the performance, the members of the WUA were able to change the leader. This was also a good confirmation that the participative approach is for the good of all.

## Conclusions & Recommendations

Throughout the life of the project since 2001, many lessons were learnt and difficulties were overcome. These were documented in the several reports of the project and finally in this quick review of the project story. It is thus important to preserve the experience gained and to build

upon it; it is beneficial to use these lessons and approaches in solving obstacles in the further work in establishing participative irrigation either in Jordan and elsewhere. The experience gained here is really unique; it represented the formation of a participative irrigation management from a severely

disrupted system and yet involving various social structures and levels.

From the described experience and the interviews undertaken during the preparation of this document, it was concluded that the associations became ready to look for the future and to entrust the

junior farmers and the coming generation that they have to work and operate through WUA. The farmers even asked that the WUA should be able to expand in their capacity and mandates (tasks).

It was revealed that the WUA appreciate the experience of this endeavor (approach, goal, institutional set-up). They unanimously formulated their noble objective as “to reach efficient and fair water distribution to all farmers”.

The step by step approach was remarkable factor for the success. Today, almost 80% the irrigated farming area in the Jordan Valley is managed in participation by WUA. The transfer of the entire responsibility of operational tasks so far has been granted to 11 associations. In steps the members of the WUA have developed a great feeling of ownership. It is indeed worthwhile to note that the newly developed experience in participative irrigation management links well with the traditional way the farmers - at least in this part of the world - used to adopt for years. It is based on equal rights and has a religious dimension as well.

Therefore it is recommended to utilize this unique feature in further developments and replication of the approach.

In all the experiment showed the readiness of both farmers and JVA to move from a more or less “permissive participation” (where JVA remains in the driver’s seat for most of the responsibilities) to a transfer of operation and maintenance tasks to WUA. It is again confirmed that this step is essential for an eventual sustainable organizational basis for water user participation.

With regard to the performance, the WUA performed in an organized manner. Rooms for further improvements were spotted along the process such as in the leadership of the WUA and the management of the WUA. The improvements were adopted in steps, as these were introduced to the loop of lessons learnt. Certainly, more issues could be learnt in the future, this is a dynamic process and many experiences may yet appear, but

what is wise is to learn and build on experience.

It can be concluded that the drivers of change were well understood and their potential effects were well utilized to enable better water resources management. The drivers of change were:

- To sustain irrigated agriculture in the Valley;
- To avoid privatization of irrigation water;
- To avoid further transfer of water for municipal uses or investment projects;
- To improve productivity and quality of life of the farmers associations.

It is highly recommended that future initiatives for participative irrigation make best use of the drivers of change determined by the society (beneficiary party) as was adopted in this project. In this way the results will be relevant and the positive impacts would be more significant.