technical cooperation, which were targeted at government agencies. JICA's experts were not able to respond sufficiently against these tremendous movements, and in fact, they could do nothing as experts, but observe the conditions. It could be said that this was a limitation of technical cooperation at the individual level. Though it seems that a response at the policy level could be made adequately by JICA's overseas office and headquarters in light of their areas of responsibility and capacity, but there is no record of JICA headquarters leading policy dialogue with the Ghanaian government or the World Bank. Even after this, GIDA's human resources continued to decline.

# 2-4 SSIAPP Main Phase (from 1997 to 2002)

# 2-4-1 Overview

The IDC had been established with the dispatch of the individual expert, and this had evolved into a "core function development project." At the same time, a development survey focusing on the target district (the Ashaiman district) had begun. This led to a project being implemented to improve irrigation facilities. With these existing elements, the technical cooperation project "Small-scale Irrigated Agriculture Promotion Project (SSIAPP)" was implemented comprehensively. During this phase, the number of long-term experts dispatched was increased, and the project term was set at 5 years. It could be argued that this phase was the culmination of JICA's commitment to the promotion of irrigation in Ghana.

# 2-4-2 Initial Intent

Based on the understanding of the intent of this phase, the following are the characteristics of the initial intent:

Full-scale technical cooperation projectA model farming system as an objectiveAn unclear strategy for nationwide expansionDetailed support for model districtsOrientation toward the participatory approach of farmersEstablishment of project offices in counterpart organizations

# (1) Full-scale technical cooperation project

Following the dispatch of individual expert, and the research center project, a full-scale technical cooperation project started to be implemented. Long-term experts formed a team of 6 (a team leader, a coordinator, and those in charge of cultivation, water management, farmers' organizations, and agricultural machinery), and the term of the project is 5 years, relatively long. At the same time, a project to improve irrigation facilities in target districts was run simultaneously using grant aid. It can be argued that the project was a highly comprehensive support program that included not only software-type but also hardware-type technological cooperation in view of the entire JICA's efforts.

Similar to regular technical cooperation projects, this project was managed using a PDM. The improvement of the production of target farmers was set as its project purpose. This was not its only project purpose, and technology transfer with the participation of the counterparts was set as its secondary purpose. To this end, counterpart training was emphasized, and the projects as well as training in Japan were planned from the beginning like the previous phase. As with regular technical cooperation projects, counterparts were attached to experts in each of their respective fields, and the technical aspect of activities proceeded under the leadership of the Japanese experts.

## (2) The aim for a model farming system, and an unclear strategy for nationwide expansion

According to the original PDM, the project purpose was to "establish a model farming system," and the overall goal was to "increase farmers' income in other districts." As for the project purpose, we must clarify what is meant by a "model farming system." From looking at the fact that facilities had been improved in the project's target districts, Ashaiman and Okyereko, this term "model" can be understood to mean a technologically exemplary model under ideal conditions where facility improvements had been promoted. However, it seems that the relevant parties did not necessarily have the same image about the model. For example, the overall goal to "increase farmers' income in other districts" comes after the project purpose, so it can be understood that the intention was for a technology that could also be expanded to regions outside the target districts. If such was the case, then it raises such questions as to what extent there were other regions with favorable conditions where facilities had been improved, and the level of farmers was already rising like that in the Ashaiman district; and as to what would become of districts that did not fit this model. With the dissemination taken into account, it is conceivable that the "model farming system" was not particularly sophisticated, but was at a level where it could be transferred to other districts. The impression of the experts at the time was that the improvements performed using grant aid did not adequately reflect opinions coordinated with people on the side of the technical cooperation project, and they reminisced that if more of the needs from the technical project side had been adopted, it probably would not have ended up being such an expensive facility being improved by grand aid. In effect, it seems that the facility improvements were actually promoted independently by the provider of the grand aid.

# (3) An unclear strategy for nationwide expansion

With regard to a strategy for expanding the model farming system to other districts, the PDM only describes that the external condition (in other words, the requirement for linking the project purpose with the overall goal) was to "expand the model farming system to other districts," and there was no clear mention about "who" was to promote the system, or "how" it should be promoted specifically. JICA was not alone in this philosophy of first creating a model and then subsequently expanding it. It is a logic that is often adopted by other donors. However, it is believed that it is particularly difficult to expand into other districts when the inputs in the model district are large. It was apparent that during this phase the expansion strategy was not sufficiently discussed and clarified.

Although the strategy was unclear, people struggled to resolve this issue at the project level. For example, we can ascertain that there was intent to link up with an expansion nationwide through training, and by building accommodation facilities so that farmers from other districts could receive training in the capital.

# (4) Detailed support for model districts

During the technical cooperation project, it was not just research and training that was conducted in the model districts. Starting with baseline surveys and analysis, detailed assistance was implemented under the principle of the "field-oriented approach," including the establishment of farmers' organizations, and the adoption of a microcredit system. The increase of production and increased farmers' income through increased production were the criteria for being able to claim that a model farming system had been established. To achieve this objective, a composite approach including guidance on agricultural technology, and the establishment of farmers' organizations was adopted in order to "do everything they can." Even at the research center of the earlier phase, software-type assistance, such as training on agricultural technology, had been provided. But during this Main Phase, software-type assistance was not limited to only technology, and a broader range of assistance was provided, including sources of funds (microcredits) and organizations (agricultural cooperatives). Furthermore, because these broad-ranging types of software-type support were being provided in parallel with hardware-type support, such as the improvement of irrigation facilities, there was virtually a full spectrum of support.

# (5) Orientation toward the participatory approach of farmers

By extending the areas of support from merely pure technical assistance to organizations, it became necessary for beneficiary farmers to participate in the projects. For this to happen, it was decided to incorporate farmer representatives into the committees for the various projects. At that time, there was a psychological chasm between GIDA and farmers. GIDA had a false idea that "farmers knew nothing, and were just there to compound problems." At the same time, farmers criticized GIDA and the government of "not doing anything what should be done." In order to shake off these kinds of misunderstandings, to recognize their respective roles, and to get the farmers to autonomously administer the model districts, a collaboration was sought between GIDA and the farmers. During the course of the progress, the focus shifted toward the participatory approach of farmers. Efforts were made to reflect the farmers' needs directly by allowing representatives of farmers. This concept of the participatory approach of farmers evolved as each project proceeded. For example, at the start of a project, participation would be at a level where farmers participated voluntarily in farming activities and farmers' organizations, but as the project moved into its second half, farmers would participate in the project steering committee and they would influence the direction of the project.

# (6) Establishment of project offices in counterpart organizations

The project office was set up in GIDA. It was hoped that project management skills would be improved with the project office established in the public corporation, GIDA staff were assigned as the counterparts, and the project managed by the counterpart organization. It was also hoped that the relevant counterparts would acquire the skills necessary to implement activities designed for the sustainability of the model districts as well as similar other projects to be implemented after the completion of the project. However, for convenience, a leader and a coordinator were assigned to GIDA's project office, and other specialist experts ended up establishing their offices separately in the IDC in the model district.

# 2-4-3 Results

Activities were implemented during this phase based on the logic shown in Figure 2-7. The following summarizes their results:

Achievement of the project purpose: Achievement of the model districts Failure to achieve the overall goal: Unclear strategy for expanding the project across the whole country

Relationship-building between farmers and GIDA

Capacity enhancement for counterparts, and their increased burden

## (1) Achievement of the project purpose: Achievement of the model districts

In the Ashaiman and Okyereko districts, in addition to agricultural technology, detailed technical assistance ranging from baseline surveys to the formation of farmers' organizations was provided in parallel with a separate project to improve facilities. The result was that, in both model districts, agricultural productivity increased, and the income of farmers also increased. According to an evaluation report issued at that time, almost all the participating farmers recognized improvements in farming, irrigation service charges were being collected, and training participants from other project districts also regarded developed technologies highly. As long as established indicators are examined, it was evaluated that the project purpose was achieved. As a result of the goals at the model districts being accomplished, it can be judged that the project purpose was achieved. However, on the other hand, according to the evaluation study at the time, the definition of the "model farming system" was vague, and there were differences in interpretation among the persons involved. There was debate over the question as to whether the achievement of the indicators would indicate the "establishment of a model farming system," and the ambiguity of the word "model" remained so until the end. Furthermore, microcredits, farmers' organizations, and other mechanisms and organizations could not be operated fully autonomously within a short period of time. This is attributable to the characteristics of organizations and mechanisms, which are easily influenced by culture, customs and other uncontrollable elements of a district, and take time to get established.

oject	mprovement of facilities in model districts (separate project)	ase of crop yields incomes in model districts	Increased effects through Recognition as exemplar demonstration in other districts farming system (Overall goal Application of farmers)	knowledge in other districts In other districts in other districts ent of tris, other districts in other dis	Promotion of sustainability						Source: Created by author
RESULTS WITHIN Pro	Enhancement of farmers' knowledge in model districts	Formation of farmers' associations	Implementation of → Continuation of microcredit microcredit Enhancement of farmers' knowledge in other districts	Enhancement of counterparts' abilities abilities		Efficient technology transfer	* Experience of the organizational Japanese work style capacity-building	Development of technology adaptable to the site	Appropriate project		managed autonomous
SSIAPP (1997-2002) ACTIVITIES	Development of farming methods that suit the local sites ↓ Training for the expansion of developed farming methods	Experiments for improvements to farming Support for the formation of Farmers' associations	Support for the introduction of microcredit Training for farmers from other districts	Counterparts' training through practice Counterpart training in Japan	APPROACH	"Technology transfer-type" technical cooperation under the leadership of Japanese experts	Joint approach to be taken for developments suitable for Ghana, rather than "teaching" existing information.	Main activities to be site-focused, being implemented in the model districts	Japanese experts to lead the project management	Farm management in model districts with the participation of farmers	Oriented toward strengthening collaboration between GIDA and farmers in project management
Comprehensive Logic Model of	<ul> <li>Japanese experts</li> <li>Team leader</li> <li>Coordinator/Training</li> <li>Cultivation</li> <li>Water management</li> <li>Farmers' organizations/Farming</li> <li>Agricultural machinery</li> </ul>	Ghanaian counterparts     Project Director     Technical Area Counterpart     cuttivation/water management     /agricultural machinery/     farmers' organizations/training	<ul> <li>Equipment and materials Vehicles</li> <li>Equipment and materials, etc.</li> <li>for surveying, farming and training</li> <li>Facilities</li> <li>frigation Development Center</li> </ul>	(IDC) Training center 2 model districts • Working capital for the project • Counterpart training expenses	ORGANIZATION	• Was joint Japanese-Ghanaian team, but in effect, project team structure with Japanese leadership	Established project office in GIDA	Staff separated into GIDA and Irrigation Development Center (IDC)	<ul> <li>Target model district are one adjacent to IDC and another which removed from IDC</li> </ul>		
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Figure 2-7 The Logic Model (Initial Intent)

# (2) Failure to achieve the overall goal: No clear strategy for expanding the project across the whole country

As indicated in the PDM for the original plan, the logic was that, once the "model farming system" had been established (namely the project purpose), the same model would be transferred, even in part, to other districts, and improvements would be sought nationwide. However, according to the evaluation report at that time, it was viewed that the overall goal had not been achieved. And in fact, it was not until the ensuing follow-up stage that any real involvement with other districts was first initiated. The truth is that, in the Ashaiman and Okyereko districts, the approach taken was exceptionally support-intensive, so it is natural to think that these models were the ideal and exemplary models. This being the case, in order to transfer the content of these models without modification to other districts, the same level of support input and time would be necessary, and this lacks practicality. Suppose that the model could be used partially, and segments of the model were implemented step by step, it would be unclear how feasible to use the model in districts not equipped with facilities or agricultural fields. With their activities taken into account, it appears that training and demonstration were implemented as a strategy for dissemination in this phase. In actual fact, this project devoted enormous efforts to train farmers, and agricultural training was provided on a number of occasions at the training center for farmers from other districts. Nevertheless, it remains unverified whether this training subsequently helped farmers to increase farming-related income with their training applied to their farming land. Moreover, the effect of demonstrating successful cases generated in the model districts is also limited because there is quite a distance from other irrigation districts to the model districts, and traffic and lodging expenses would have to be spent in order to realize such an effect. In the PDM, this was handled as an external condition, or as the logic saying that "GIDA shall sustain activities for the expansion of the project," however, specific strategies to implement the overall goal of the project "national expansion" remained unaddressed. According to the final evaluation report, even up until the end, there were still differences in the interpretation of the definition of the "model farming system" among the concerned parties.

# (3) Relationship-building between farmers and GIDA

A participatory approach of farmers was taken for the project to be promoted without treating farmers as mere beneficiaries, and farmers were allowed to participate directly in the project committees. At that time, there was a psychological gap between farmers and GIDA. In this sense, the project facilitated the exchange of opinions between farmers and GIDA, and improved their relationship. Naturally, efforts for relationship-building centered on the model districts of Ashaiman and Okyereko. Through this experience, GIDA began to reach an awareness of the potential of farmers. The shift toward this participatory approach was an important turnaround in the sense that it would carry over into the approach that would become the basis of the subsequent follow-up phase.

## (4) Capacity-enhancement in counterpart organizations and increasing their burden

During this phase, a full-scale technical cooperation project was carried out, and there was an enormous input of human resources from Japan. Project offices were set up at GIDA, the counterpart organization, and IDC, where Japanese experts worked alongside their counterparts so that they could meet face-to-face every day. The Ghanaian counterparts could receive technical instructions directly from Japanese experts, and experience the real Japanese work style by working together with them. Up until that time, assistance had also been received from Republic of Korea and other countries, but it was only Japan that had externally committed to GIDA so much. Consequently, the impact of Japanese personnel spread broadly throughout GIDA, not only in terms of technology, but in work practices as well. As a result, it can be viewed that GIDA's organizational capacity was improved due to the effects of an efficient way of Japanese work practices. Financial input was also particularly substantial, so the organizational reinforcement of its facilities was also accomplished by setting up the training center and related installations in GIDA. On the other hand, these significant investments also overwhelmed GIDA organizationally. Whilst its structural adjustments led to cuts in personnel, most of GIDA's middle-level officers had to be assigned to the project to become counterparts for the Japanese staff. In addition to this, with regard to the training center, although Japan put up funds for the construction costs, it is GIDA that was responsible for the subsequent administrative and maintenance costs. Finance was the biggest problem for GIDA at that time, as it was for other Ghanaian organizations, and the running costs for this kind of facility became a burden. Furthermore, GIDA could not manage to raise funds by itself, to cover expenses to keep afloat programs which started under this project, such as training for farmers from other districts. While assistance from Japan built up GIDA's capacity and facilities, it could also be said that, conversely, it also increased the burden that GIDA must bear.

## 2-4-4 Analysis

The following facts can be indicated from the relationship between the initial intent and the results in Figure 2-8.

The effectiveness and problems of the model project

The effectiveness and problems of the technical cooperation project

The effectiveness and problems of the participatory approach

The effectiveness and problems of the significant level of inputs from Japan

## (1) The effectiveness and problems of the model project

The characteristic of this phase was the so-called local society empowerment program which used the expression "model farming system" in its project purpose, and which implemented a project restricted to certain districts but with an eye to nationwide expansion. In this case, 2 directions are conceivable for the model. One is the "template model" which is transferable to other districts in its current form. The other is the "role model" - an ideal complete model, which, while it cannot be transferred in its current form, is the type of model on which other districts are fashioned. In reality, it



Figure 2-8 The Logic Model (Follow-up Study)

is not just one or the other, but rather, each contains certain elements of the other. If we look at the volume of inputs and the content of the activities, the approach taken in the model districts was a "something-for-everyone" type of approach where "everything that could be done would be done." Therefore, it appears that this phase leaned more toward being a "role model." In truth, there was a tremendous volume of input in the model districts, and in the end, exemplary model districts were achieved. However, even up until the very end, the interpretation of the direction varied widely among the parties involved. Furthermore, there was no clear strategy ahead on how to apply and extend the model to other districts. In the case of a "template model," it is just a question of copying the model, and there are few problems. But when the model program is a "role model," other difficult problems arise concerning the application of the model. (What parts of the model can be transferred? Have the conditions been met? How should they be transferred?) These strategically serious problems had been dealt with by a single phrase about the external condition in the PDM: "GIDA will continue expansion activities." And sure enough, the attainment of the overall goal became obscured. The determination of the effectiveness of the model program differs depending on the two directions. In the case of the "template model," its expansion strategy is comparatively simple, but it is never easy to succeed in the model districts because it is necessary to adjust the inputs and approach in the model districts in consideration of the characteristics of the other districts. On the other hand, in the case of the "role model," it is easy to produce results in the model districts by concentrating inputs and activities in the districts, but the chances of expanding the model to other districts are lower. More than anything else, a major premise is to recognize firmly as to which direction the "model" in the project is inclined.

#### (2) The effectiveness and problems of the technical cooperation project

As mentioned above, the project purpose was the "establishment of a model farming system." From the perspective of the degrees of achievement in the various indicators, including net agricultural produce and farmers' satisfaction levels, it appears that the project purpose was achieved. Meanwhile, in light of the facts that the project was a technical cooperation project, and that the construction/improvement of irrigation facilities was not an input, further consideration is necessary before we can conclude that all of these outcomes were the effects of the project. For example, according to an evaluation questionnaire conducted by an evaluation team for farmers at the time, it was found that all the farmers' satisfaction level for improvements in farming was not entirely due to the effects of the project. In other words, it has transpired that the extent of the farmers' high assessment resulted directly from the improvements to irrigation facilities (not this project). However, while it is true that improvements to farming and farmers' lifestyles were not entirely due to the results of the project, it is probably reasonable to believe that the effectiveness of the results of the project went beyond technical improvements. In other words, it is perfectly conceivable that the functions of the irrigation facilities were more effectively used as a result of the technical improvements generated by the project, and that the improvements functioned with synergistic effects. Conversely, let us consider what would have happened if there had only been technical cooperation. It is difficult to know the

answer to this question. As an example, during this phase, a number of courses on agricultural technology were conducted for farmers from other districts. However, there are no reports that these courses alone improved farmers' technology, or improved agricultural production. This alone does not lead to the conclusion that the effectiveness of the technical cooperation was poor, but it would appear that even greater synergistic effects could be generated by combining several forms of support rather than just a single form of support.

#### (3) The effectiveness and problems of the participatory approach

From this phase, there had been an increasing number of activities with direct approaches to farmers, such as the setup of microcredits and agricultural cooperatives, in addition to activities related to agricultural technology. Farmer representatives also participated in project committees, and, in a certain sense, the approach of this phase shifted greatly toward a participatory approach. Without farmers' voluntary participation, the creation of mechanisms, such as microcredits and agricultural cooperatives, would not otherwise be achievable, so it was, so to speak, a natural course toward a participatory approach. As a result of this shift toward a participatory approach, farmers increased their self-sustaining, agricultural unions were realized, and there was greater community independence. Meanwhile, the adoption of this participatory approach was not just for farmers. It increased the opportunities for farmers and GIDA staff to interact, and it also gave GIDA staff, who had only ever seen farmers as mere recipients of services, an "awareness" of the potential of farmers. At this stage, the participatory approach was not perfect for farmers to recognize problems, or decide solutions. But, as called out in the project plan, a participatory approach was taken to allow farmers to participate at pivotal points. In the wake of this progress, the effectiveness of the participatory approach gradually began to become recognized, and the participatory approach of farmers came to be adopted consciously in the subsequent Follow-up Phase.

# (4) The effectiveness and problems of the significant level of inputs from Japan

During this phase, there was a tremendous input of human resources and materials to GIDA and the model districts. This input was not on a national scale, but was provided in a concentrated manner to GIDA and the model districts. It can be argued that, as a result, human resources were developed, and training and other facilities were improved for GIDA in addition to outcomes fully achieved in the model districts. According to the opinion of an Ashaiman farmer, it was right during this period that agricultural productivity increased dramatically, and agricultural harvests were stabilized without being influenced by rainfall. Furthermore, for GIDA, which had anguished under the World Bank's pressure for structural adjustment, the inputs that Japan brought were indeed like "blessed rains." It can be argued that there were significant impacts from the tremendous inputs, on the other hand, these vast inputs ended up making the project purpose of expanding the "model farming system" throughout the nation an unrealistic proposition. In addition, since the activities had widened when the support from Japan concluded, a paradox where raising funds for new administrative costs became an incredible burden was created. Under ordinary circumstances, activities in the model districts should have first been planned with an emphasis on self-sustaining, and in full consideration of Ghana's capacities so Ghana could expand the model. However, solutions were rushed from a short-term perspective during this phase in order to create successful cases in the model districts. This resulted in the creation of models which could not be copied by other districts. Providing necessary inputs is important, but it is necessary to recognize that large amounts of input will lead to problems of sustainability and expandability. What this phase teaches us is that, especially from the perspective of CD, we need to ascertain the capacity of the counterpart, and adequately examine the level of appropriate support with a view to the "future."

# 2-5 SSIAPP Follow-up Phase (from 2002 to 2004)

## 2-5-1 Overview

During the previous SSIAPP Main Phase for 5 years, support was provided with a focus on the model districts. As a result, the outcomes were concentrated only in the model districts, and it was assessed that the link to the overall goal (the promotion of irrigation at the national level) was unclear. It was then decided to implement 2 year follow-up cooperation to resolve the remaining issues. During this phase, in order to achieve the overall goal of "improving the farming system at all the irrigation districts under the jurisdiction of GIDA," the project purpose was set to "prepare strategies and guidelines for nationwide dissemination." Furthermore, activities restricted to model districts were extended to other irrigation districts. As a result, the project went beyond the framework of "follow-up," and was developed to aim for the expansion of the model districts nationwide.

# 2-5-2 Initial Intent

Based on the understanding of the intent of this phase, the following are the characteristics of the initial intent:

Focus on overall goal, and specific project purpose Nationwide expansion of support Introduction of full-scale participation by farmers Japanese experts as advisors

# (1) Focus on overall goal, and specific project purpose

As a result of promoting the model-type project during the previous phase, the path toward expansion to regions beyond the model districts became invisible. In view of this fact, in order to discuss as to what strategies should be taken for nationwide expansion, the parties to the project (the Ghanaian Ministry of Agriculture, GIDA, farmers, the project team, the Japanese embassy, and others) gathered for a workshop before launching the Follow-up project, which was to link to the subsequent stages. At the workshop, there was a discussion that the promotion of irrigation should be the ultimate

goal, and what the project should achieve in order to attain the ultimate goal. The result was that the goal of "establishing a model farming system" was clarified as the "establishment of guidelines for irrigated agriculture, and strategies for nationwide expansion." The guidelines were to become a technical standard text on irrigated agriculture for nationwide expansion, and the strategies also became an action plan for promoting irrigation that reflects the regional characteristics of each district. It was here that the model districts were characterized as places for conducting field experiments on technology for nationwide expansion, and the level of the project purpose was explicitly defined as the national level.

#### (2) Nationwide expansion of support

From this phase, the target of support was extended to other irrigation districts beyond the model districts. Beginning in the previous phase, training had been conducted for farmers from areas outside the model districts. Starting from this phase, with an eye to nationwide expansion seriously, workshops were to be held for ascertaining the needs of other irrigation districts, and farmers were to be invited from other districts to Accra, where training on a national scale was to be conducted. Since this phase was positioned as a Follow-up project to the previous phase, activities in the model districts were central to the daily activities, but nationwide expansion was at the fore of the project team's line of vision. Consequently, the spotlight of activities was also on monitoring and advice in the existing model districts, but most of the new activities for this phase were for nationwide expansion.

#### (3) Introduction of a full-scale participatory approach by farmers

The creation of strategies for nationwide expansion was set as a project purpose. This was not merely the idea of experts and counterparts in the Ghanaian capital of Accra, but in fact reflected the local needs of the irrigation districts sprawling across each region of Ghana. A participatory approach had also been adopted during the previous phase by using such methods as allowing farmer representatives to participate in technical committees. During this phase, the participatory approach of farmers was taken, from needs surveys, to the formulation of proposals for action plans in each of the districts. Furthermore, the actual technique adopted in planning the participatory approach was not a Project Cycle Management (PCM) or other existing means, but a technique formulated by the counterparts (the Workshop for Action-plan Orientation (WAO)) was adopted. By means of this participatory approach planning technique, the counterparts actually traveled to local regions, and created an action plan for improvements that should be made by local farmers, not only investigating local needs.

# (4) Japanese experts as advisors

The leader of the Japanese experts for this phase was renamed "chief advisor," and the role of the Japanese experts was regarded as "supporters," but not guidance providers. Authority had gradually been transferred to the Ghanaian side from phase to phase since 1988 when the powerful leadership of

the Japanese expert was taken. And at this stage, the Japanese experts were clearly positioned as "supporters." The leader on the Ghana side was called the "project manager," and decisions were made by the Ghanaian project manager by means of the project management committee. As expected, the Ghanaian project manager did not have complete authority over action taken. There was no doubt that the Japanese expert as an advisor exerted a considerable influence over any decisions made for substantial and technical directions. However, as a stance, it was made clear that the Ghanaian side had more of a lead role.

# 2-5-3 Results

Activities were implemented during this phase based on the logic shown in Figure 2-9. The following characterizes their results:

Achievement of the project purpose Improvements in other irrigation districts Key problem with the overall goal: Institution-building Dependence on Japanese aid and the associated discontent

# (1) Achievement of the project purpose

Though a 2-year period of activities was short, guidelines that summarized JICA's technical support for the promotion of irrigation in Ghana were put together by utilizing the 5 years of experience during the Main Phase, and through the efforts of the project team. Furthermore, the strategies for nationwide expansion were also created as specific action plans for the respective nationwide irrigation districts across Ghana, not as strategies for expansion throughout Ghana. The farmers partook in the formulation of the action plans, and some of the activities started to be implemented. The concept of the "model" from the previous phase was clarified into specific outcome objectives of the guidelines and strategies. As a result, the judgment of whether the project purpose had been achieved became comparatively easy. From the final evaluation report from this phase, and from the opinions of the persons involved, it is considered that the project purpose was fundamentally achieved.

#### (2) Improvements in other irrigation districts

To create strategies, a process called WAO was adopted to formulate action plans using the participatory approach of farmers. The original objective was to find out the needs of farmers and issues on irrigated agriculture in districts outside the model districts. Part of the objective was to create "action plans" for improvements, and some of these were to be actually implemented as pilot activities. These pilot activities basically do not need funds, and farmers do only what they can do readily for the activities. They were established for the purpose of measuring the capacity of farmers in each irrigation district. However, some districts began to actually generate appreciable outcomes through the pilot activities, and by continuing to execute improvement activities by themselves. Improvements in other districts were originally meant to be a goal for stages subsequent to this current phase (overall





goal level), so the outcomes went beyond the original plan.

#### (3) Key problem with the overall goal: Institution-building

Through the strategy-building activities for nationwide expansion (workshops through a participatory approach, and farmer training), it was gradually revealed that the underdevelopment of a management system for the irrigation districts was one of the key driver in the floundering of irrigated agriculture in Ghana. There existed the fundamental institutional problems of "considerable inadequacies or total absence of irrigated farming techniques," "the fact that the farmers' organizations - a base for the advancement of irrigated agriculture - had become a mere facade," and the "neglect of facilities maintenance." Then it was recognized that the "development and dissemination of technology" as well as "institution-building" is essential for the advancement of irrigated agriculture. In other words, even if farmers exercised organizational capacity, continued to make improvements, or enhanced technology through training and the like, there could be no aspiration for true prosperity as long as there was no political and financial support from the government of Ghana, and the Ministry of Agriculture. This awareness was shared by both Ghana and Japan, and resulted in technical cooperation related to the formulation of a "system for the management of irrigation facilities." In this "system for the management of irrigation facilities," the roles and responsibilities of the government and the farmers' organizations would be clarified based on the perception of what should be done to maintain the sustainability of irrigated agriculture.

#### (4) Dependence on Japanese aid and the associated discontent

The chief advisor who served during this phase spoke reflectively, "Whether it be because of the adverse effects of Japan's lengthy cooperation over a long period of time from 1988, or whether it be because of the structural problems of cooperation and aid, I was concerned with the fact that they (GIDA) lacked independence. Cooperation and aid are only temporary devices. A counterpart's independence greatly affects the endurance of outcomes, and a resultant impact. During the follow-up period, I strived to nurture their independence, using such techniques as conferring with the counterparts whenever petty, or any other business decisions needed to be made, but I feel that no major changes could be made to the their consciousness. The difficulty of overcoming structural problems, and the adverse effects of long-term cooperation was harder than I imagined." Regardless of the fact that authority had been transferred and the role of experts as supporters had been clarified in the phase over the past 10 years in order to nurture and facilitate the independence of the Ghanaians as much as possible, no improvements were made to the reliance on Japan. It was far from being improved because a tremendous amount of input had been provided to them over a long period of time from GIDA's perspective. In that respect, it is undeniable that, conversely, Ghana's reliance on Japan was seemingly encouraged. Meanwhile, on the topic of satisfaction with the aid from Japan, there was discontent toward the fact that Japan did not provide daily allowances to counterparts even during this phase. Again, an expert spoke reflectively, "The problem lies in the way to treat counterparts