

# **The Roles of Management, Mentoring and Education Level of Farmers in The Implementation of Participatory Construction**

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## **Abstract**

The irrigation network management consisting of : operational, maintenance, and rehabilitation. Farmer Water Users Associations (WUA) hope can actively participates into those 3 stages. Several research had proved that farmer participatory could increase the sense of belonging and it will impact to irrigation network performances. One of farmer water users associations roles in implementation of irrigation rehabilitation is participatory construction. In this stages, farmer water users associations given authority to carry out the small scale of rehabilitation.

This article aimed to inform three factors that influence to implementation of participatory construction performance which are : management, farmer mentoring, and farmer education. The aspects to implementation of participatory construction performance are : to make a proposal, scheduling, technical implementation, controlling and reporting. The management roles related to cognitive competencies, affective competence (professional ethics), and psychomotoric competence (ability to move). The farmer mentoring roles includes: work facilities, working environment and job understanding. The level education of farmer such as elementary school, senior high school, senior high school, and diploma. The sample of respondent for this research taken from the activities Water Resources Management Board of Serayu Citanduy in Banyumas and Cilacap.

Based on the data analysis there are correlation between implementation participatory construction performance (Y) to the roles of management (X1), farmer mentor roles (X2) and farmer education level (X3). The correlation is  $Y = 0,764 + 0,197X1 + 0,504X2 + 0,164X3$ . Based on the correlation the farmer mentor role is prominent comparing to the management roles and farmer level education in terms of participatory construction implementation. But those three parameters significantly influence and need to be improved.

**Keywords : participatory construction, irrigation, farmer water users associations, farmer mentoring**

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## **I. INTRODUCTION**

### **Background**

The management of irrigation network consist of operational, maintenance and rehabilitation. In the operational stage, maintenance and rehabilitation related to the farming activity and farmer participatory. Farmer participation on the operational, maintenance and rehabilitation stages hopes can help reduce the budget that has to be paid by government and will improve the sense of belonging, and involve in maintenance of the irrigation network infrastructure.

According to the Indonesian law no. 7/2004 about water resources, on the article no 84 said that "community has same oportunity to take a role in the process of planning, implementing and monitoring to the water resources management. Furthermore explained that the roles of community related to planning, implementing and maintenance.

On the goverment regulation no 20/2006 about implementation of community based irrigation management, by recognising farmer Water Users Associations (WUA) as irrigation management organisation which is has clear authorization in planning, developing, operational, rahabilitation, and budgeting the irrigation network.

During the participatory construction implementation WUA has involved in the rehabilitation of irrigation network. WUA involvement is similar to the sub-contractor/partner trough operational cooperation in the rehabilitation of irrigation network by main contractor. Furthermore the roles will increase to the simple work (recovery the damages) with the budget up to IDR 50.000.000. Before the role has implemented they have been trained about how to atrengthen the assosiation and administration (Tax, bank account,etc.)

On the main irrigation project in central java, the participatory construction had been tried in several district, including 30 groups of farmer in Banyumas and Cilacap district. Thats why, we would like to take this issue as our research topic. Becoming interesting

since this new approach where government ask to implement the irrigation network rehabilitation not to the contractor but to the community association (WUA) and stake holders.

Based on this background, the problem we are going to discuss is 'how participatory construction implementation factors, management and farmer mentoring roles guide the WUA in the implementation of participatory construction'

### **Objectives and Benefit**

The objectives of this research are:

- to know and describe the farmer participatory on the implementation of irrigation network rehabilitation.
- to know the roles and impact of magement, mentoring and level of educationof farmer in the implementation of participatory construction by farmer Water Users Associations (WUA).

Hopefully this reseach can give an input to the policy maker regardless to the operation, maintenance and rehabilitation of irrigation network, mainly related to farmer participation as subject and object of benefit.

## **II. LITERARY REVIEW**

### **Operational, Maintenance and Rehabilitation of Irrigation Network**

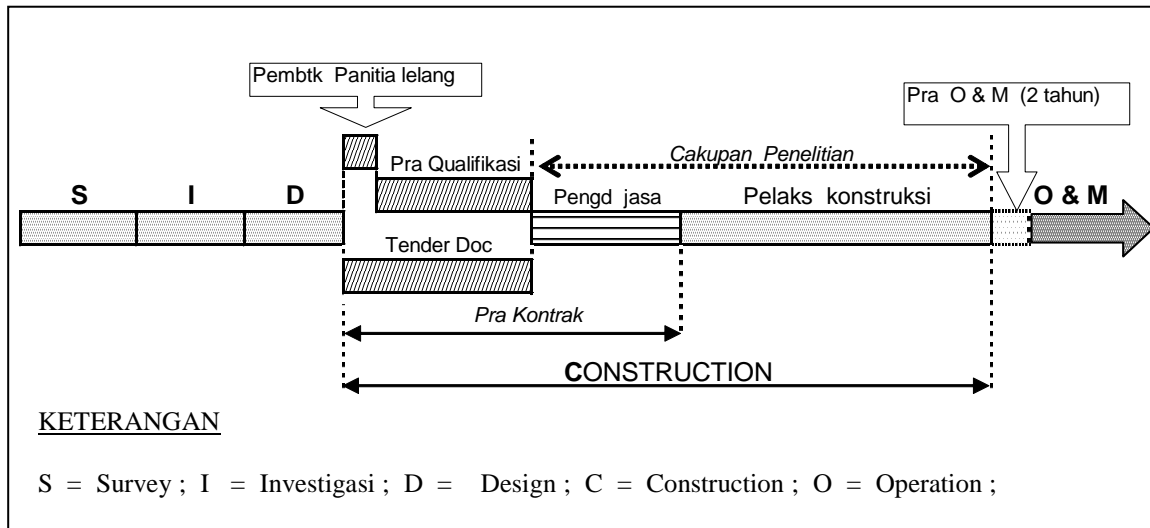
Several devinition related to irrigation activities, following Law no 20/2006 :

- Irrigation is an effort to water supply, water management and water drainage to support farming process includes : water surface irrigation, swamp irrigation, underground irrigation, pumping and ponds irrigation.

- Management of irrigation consists of : operational, maintenance, and rehabilitation irrigation network
- Irrigation network is effort to manage irrigation water and drainage includes open and close irrigation gates, gardening plan, groups system, water divider, collecting, observing and evaluating data.
- Irrigation maintenance is an effort to protect irrigation network to be function well ever lasting.
- Irrigation network rehabilitation is rehabilitation activities to re-function the network.
- Participatory of development and management of irrigation is irrigation holder based on community participatory since the beginning such as ; planning, decicion process, maintenance and rehabilitation.
- Association of water user is an organization that manages the irrigation system and becoming a association for the farmer within an irrigation area. It's made by the farmer themselves democratically including local organization of irrigation management.

### **Participatory Construction**

In the Water Resources Department, it was developed a methode called Participatory Construction Method, which is a part of irrigation rehabilitation activities in Indonesia. According to Wirawan (2003) and Davies (1998) the development of irrigation network will pass several proceses known as SIDCOM stands for Survey, Investigation, Design, Construction Operation and Maintenance. For the new irrigation construction there are land aquisition as an additional (SIDLACOM). Construction activities finished when desinging, budguting and land aquisition also the preparation of construction work finish. It is showed on the bellow picture :



**Figure 1.** Implementation of Participatory Construction

The concept of construction management has been explained by many experts. Mainly the said to manage and implement the construction work there are several other activities such as, planning, organizing, actuating and controlling to the five other resources known as 5 M which is Man, Money, Method, Material and Machine (Mulyani,1996) and (Peurifoy, 1982) should be optimized to implement the construction work. Besides that there are some activities like directing, staffing, marketing and environment to complete those activities. Related to the participatory construction by WUA, only addressed to the rehabilitation irrigation network up to IDR 50.000.000 . This is becoming interesting, since this a new activities for WUA. To do this activities farmers needs a mentoring process and they have to involve in the implementation.

### **WUA as the Construction Implementation**

WUA is a part of irrigation management board that has duties to flow, guidance, devide the water to flow to the rice field. In the beginning this activity only limeted on the tertier squares. In the rehabilitation activity also limited to the tertier and kuarter line. With this experience, to implement the simple construction work such as digging and piled up

the embankment has not yet touch by appropriate management implementation. Because of that, the WUA empowerment programs and t test (treatment) for them will be usefull to enrich their experience, knowledge and new skill about participatory construction of irrigation lines (Suherman, 2003). They have to make work plan, methodology, budget estimation, propossal, time schedule, worker controll, cash flow controll and the payment system by KPKN. Their understanding of these work is a part need to be observed. Because of they had implemented the participatory construction work, its assumed WUA has learn and understood several aspects of this concept according to their experience (Eddi S, 2006)

### **Roles of Management in the Implementation of Participatory Construction**

The relationship between Farmer Water Users Associations (WUA) as a implementator and district controller as a management direction, has same vision regarding to the rehabilitation of irrigation network. As a government employee that has duty to implement participatory concept by budget allocated, they have to complete their work according to the budget, time line and quality controll (Cuk Sunaryono, 2004). It is also the same with WUA, they have to alocate the budget they got and expense it in the correct way. The management with their experiences doing construction should transfer the knowledge to WUA. It can be assumed that the roles of management influencing the understanding of WUA in doing construction.

#### **The Roles of Farmer Mentor in the Implementation of Participatory Construction**

The relationship between WUA to the farmer mentor should done properly. The mentor appointed democratically to facilitate the activity of WUA in “social technic” to do participatory construction (Hafied Gany et al., 2004). For that, they have to make the environment of work good to motivate their performance. Both of them have the same

vision for this work to be succeed. The interaction amongs them will influence each other (Yuliani, 2003). The result of the job will be depend on the motivation from farmer mentor to WUA.

### **Farmer Education Level in Participatory Construction**

There are differences ability of farmers in WUA to understand the participatory construction although they have in the same field (Istianah, 2005). They come from different background, from the lower until the higher level. By this we can assumed that the level of education will had an impact to the implementation of construction work.

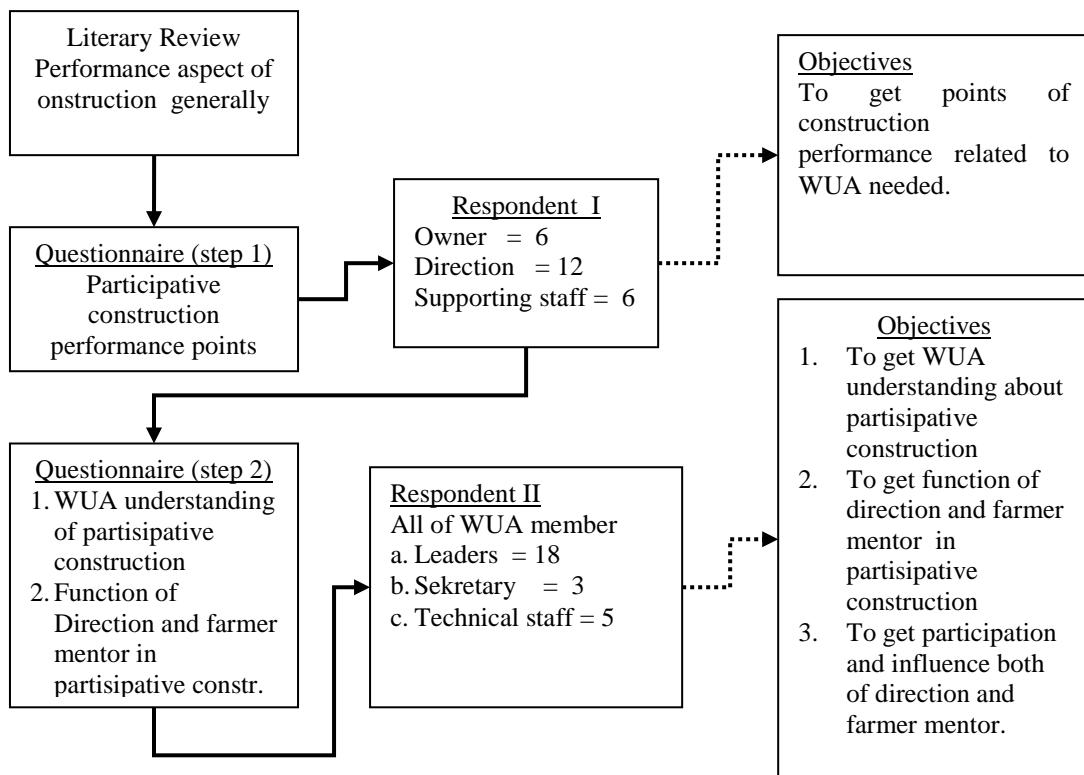
### **The Roles of Management, Farmer Mentor and Education Level on Implementation of Participatory Construction.**

The relationship amongs th 3 aspects (management, farmer mentor and education level) on the implementation of participatory construction by farmer water users associations. They try to implement this on the participatory based. Their partnership has to be run in the smooth way. Farmer mentor as a motivator and facilitator in the irrigation system has a role in the socio technical. District officer has a role in the technical matters, and those aimed to the project be finished succesfully. According to the theory above, assuming there is a relationship amongs the 3 aspects (management, farmer mentor and education level) together in the implementation of participatory construction.

## **III. RESEARCH METHOD**

The research works consist several activities such as : population survey, decide sample, making questionnaire, data collecting, data analysis and conclusion.

Respondent chosen randomly based on sampling area and cluster. The sample taken from activity in Water Resources Management Board in Serayu- Citanduy which is located in Banyumas and Cilacap. The primary data of this research taken from respondent by questionnaire and in-depth interview. The secondary data taken from literary review related to participatory construction management in irrigation system rehabilitation. All data will be compile and tabulate to be able to review and analyze it accordingly. Data flow shown in the picture bellow (Purwadi, 2003):



**Figure 2.** Data Collecting Flow Chart

#### IV. RESULT AND DISCUSSION

Based on the data analisys, the result of this result are :

- a. There are 26 aspect related work that involving farmer water users associations as the contractor of rehabilitation and maintenance irrigation network. Those 26 then compress



in to 4 factors of construction implementation area which are: (1) to make a proposal, methodology and budget estimation, (2) planning and scheduling of work, (3) method of construction implementation, (4) work controlling, (5) administrative and reporting of work

- b. With all their limitation, WUA understood and able to implement the participatory construction on the rehabilitation irrigation network ( The Average score 3,660 and deviation standard of 0,64 meaning they understood/ able) to do related participatory construction work.
- c. During the implementation of participatory construction done by WUA we conclude the each aspect roles of management, farmer mentor dan education level of farmer water users associations.
- d. In mean score of 3,61 and deviation standar of 0,54 (including in good roles criteria), meaning that over all management has significant role in the implementation of participatory construction. From the regression formula  $Y = 2,014 + 0,456 X_1$ , and the coeffisien score of 0,381 meaning the management influence about 0,456 and there are corelation positively significant and significant level of 95%. There is other factors that have big influence about 2,014.
  - In mean score of 3,60 and deviation standard of 0,73 (take a good roles criteria), over all the mangement has a role in the ability of WUA to understand the participatory construction. From regression formula  $Y = 1,461 + 0,6103 X_2$  and coeffisien corelation of 0,6907, meaning the farmer mentor has influent of 0,6103 and there is positive relation with the significant level of 95%. Outside factors have a significant influence about 1,461. Farmer mentor more significant influence than management.

- In the regression formula of :  $Y = 3,1495 + 0,225 X_3$ , and the coefficient correlation of 0,365, meaning education level of WUA influenced 0,225 in the implementation of participatory construction. There is positive relationship with significant level of 95%, while the external factors influence of 3,1495.
- e. Related to the level of education, the management influent and the mentor both of them have multiple regression on understanding /ability to implement participatory construction following the regression formula  $Y = 0,764 + 0,1968 X_1 + 0,5037 X_2 + 0,1638 X_3$ . With the coefficient correlation standart 0,164 for management, 0,57 for farmer mentor and 0,265 for education level. The farmer mentor roles mostly influent comparing to the management roles and the education level wich is has low correlation. The roles of management influent is 0,1968, farmer mentor is 0,5037, education level is 0,1638, outside factors is 0,7636
- f. The management and farmer mentor roles mainly significant comparing to education level roles in order to support participatory construction activities.

## V. SUMMARIES AND CONCLUSIONS

- The roles of farmer mentor mainly significant influent comparing to education level on the participatory construction.
- Influent of management ( $X_1$ ), farmer mentor ( $X_2$ ) and education level ( $X_3$ ) in participatory construction comprehension and ability, as following regression formula :  $Y = 0,764 + 0,1968 X_1 + 0,5037 X_2 + 0,1638 X_3$ .

Based on the summaries above, there are several input as follows:

- Participatory construction method program is a starting point for farmer water users associations in construction management factors although in a small scale under IDR 50.000.000.

- To empower farmer water users associations by this method may full of jealousy for construction services. It is need to make a clear regulation. Furthermore there will be good program in the rehabilitation network, planning and implementation.

## V. RESUMES ET CONCLUSIONS

- Les rôles de mentor agriculteur principalement significative comparant le niveau d'éducation influent sur la construction participative.
- Affluent de la gestion (X1), mentor agriculteur (X2) et le niveau de scolarité (X3) dans la compréhension de la construction participative et la capacité, comme suit formule de régression:  $Y = 0,764 + 0,1968 X1 + 0,5037 X2 + 0,1638 X3$ .

Sur la base des résumés ci-dessus, il ya plusieurs entrées comme suit:

- Programme participatif méthode de construction est un point de départ pour les utilisateurs d'eau des associations d'agriculteurs dans les facteurs de gestion de la construction bien que dans une petite échelle dans IDR 50.000.000.
- Donner aux agriculteurs associations d'usagers par cette méthode peut pleine de jalousie pour les services de construction. Il est nécessaire de prendre un règlement clair. En outre, il sera bon programme dans le réseau de la réadaptation, la planification et la mise en œuvre.

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