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Livelihood Study of the Second-Generation Households of Resettlement in Koto Panjang Hydropower Region, Riau Province

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ABSTRACT

The construction of dams in many cases has led to forced displacement and resettlement of about 40-80 million people worldwide. Several studies have reported that Development Induced Displacement and Resettlement (DIDR) cause negative impacts on living standards and livelihood outcomes of the resettled communities. Koto Panjang Dam has been in operation for 20 years. The impact of settlement movement due to the construction of a long Koto Panjang dam is also experienced by second generation resettlers. The objectives of this study were: a) to assess the profile access and control on household farming livelihood of second generation of resettlers, and b) to assess the level of household welfare of the second generation in Koto Panjang hydropower region, Riau Province. All second-generation households in Koto Masjid and Pongkai Istiqamah were taken for samples (92 households). Profile access and control on households farming at the site of this study showed that men still dominated in access and control on farm management such as: land, working, credit, means of production, breeding, pest and disease control, education, training, and agricultural extension. Women were more dominant in processing and selling the yields. The poverty experienced by households in Koto Masjid village was largely due to limited land ownership, while that experienced by households in Pongkai Istiqamah village was due to the dependence of livelihoods on the rubber plantation, in addition to the limited field of other businesses in the village.

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1. Introduction

Dam construction in many cases has led to cause forced displacement and settlement around 40-80 million people worldwide (Robinson, 2003; Bui, et al, 2011; WCD, 2000). The forced displacement of population for the purpose of economic progress through development projects refers to the broader concept of Development-Induced Displacement and Resettlement (DIDR). Globally, population displacement due to development and resettlement occurs on a large scale, displacing about 10 million people each year (Bisht, 2009). Forced displacement is more than just physical relocation of people, it has the potential to destroy the economic, physical, cultural and social life of societies, leading to the impoverishment for present and future generations (Maldonado, 2012). Involuntary resettlement can be seen as a kind of external shocks (Bui et al, 2012).

The main objective of this study was to assess the profile access and control on household farming livelihood of the second generation of resettlers in the region of Hydropower Koto Panjang, Riau Province. Specific objectives of the study were: (1) Assessing the profile access and control on household farming livelihood of the second generation of resettlers in the village of Koto Masjid and Pongkai Istiqomah; (2) Assessing the level of household welfare of the second generation in the village of Koto Masjid and Pongkai Istiqomah

2. Material and Methods

This study was conducted in Koto Masjid and Pongkai Istiqomah village of subdistrict XIII Koto Kampar, Kampar District, Riau Province. A survey was carried out to collect primary and secondary data. Primary data were obtained directly from the field using quantitative and qualitative approaches, while secondary data were collected from other sources.

This research was conducted in Koto Masjid Village and Pongkai Istiqomah Village in District XIII Koto Kampar, Kampar Regency, Riau Province. in February 2016 to March 2017. The samples were all second generation of married households in Koto

Masjid and Pongkai Istiqomah Village. Based on data from the Head of Koto Masjid and Pongkai Istiqomah village, the number of households in Koto Masjid were 74 families and in Pongkai Istiqomah village were 32 families. Based on the second generation of household population in the research villages, the number of samples taken by the Slovin formula with an error term about five percent was 62 families in Koto Masjid and 30 families in Pongkai Istiqomah.

Gender analysis was employed to assess access and control of household head and his wife to asset and resources by using Harvard analysis method. Coping strategy is defined as effort of husband and wife to fulfil their household needs including food and non-food. The coping strategy is categorized into two: (a) economic strategy consists of saving and extending resources strategy; (b) social strategy is efforts to meet household needs through social network.

Gender roles in coping strategies are determined by responses given by the head of the household / partner to statements about five variables / indicators (food, health, education, farming, others) about coping strategies.

The coping strategy variable is measured using an ordinal scale, namely (1) if it has never been done; (2) sometimes done; (3) often done; (4) always done. To equalize the units used, all the scores obtained are converted in percent (0-100%), using formula (2). Composite scores obtained were categorized into three categories namely, low (score 0% - <33.33%), moderate (score 33.34% -66.67%) and high (score 66.68% -100%). The level of welfare of the second generation of settlers' households was analyzed descriptively by comparing household income with the poverty line of the Kampar Regency BPS in 2015 of Rp. 360,324 / capita / month.

3. Results and Discussions

3.1. Access and Control of Resources

Access and control over resources and the stages of farming activities can be seen in Table 1. Access and control over resources are dominated by men. Of the

nine resource variables, men control eight resources, namely, land, capital, education, production facilities, credit, information / media, training, and agricultural extension. Women only control one resource variable, that is harvest. Based on the stages of farming activities of all households surveyed, men and women stated that men were more involved in farming activities than women. It was seen from 7 stages of farming activities, 5 stages - tillage, seedling, cropping pattern, fertilization, and pest and disease control- were dominated by men. Women farmers had only 2 dominant roles, processing and selling the products. Work sharing has been influenced by the growing role of stereotypes in society stating that the women should not do relatively heavy physical works because such works should be done by men. Work sharing as labor in farming between men and women still exists and the stereotype shows a very clear division of the roles. Activities that rely on physical strength are carried out by men and the ones relatively light and require good care are conducted by women.

Table 1. Access and Control of Men and Women to Resources and Stages of Farming Activities

Resources and Stages of Farming Activities	Access				Control			
	Koto Masjid		Pongkai Istiqomah		Koto Masjid		Pongkai Istiqomah	
	M* (%)	W** (%)	M (%)	W (%)	M (%)	W (%)	M (%)	W (%)
A. Resources								
1. Land	90,32	67,10	86,67	73,10	73,18	29,75	71,45	45,08
2. Capital	83,10	59,17	75,77	49,77	65,03	38,47	62,38	42,98
3. Education	79,17	55,84	73,40	53,70	60,47	30,42	61,08	38,25
4. Means of production	96,24	53,70	93,15	66,94	85,94	28,40	75,08	28,42
5. Credit	69,47	33,10	69,81	43,10	83,08	20,70	58,47	38,42
6. Yields	63,45	93,20	42,46	93,40	36,35	62,98	18,58	83,08
7. Information/media	89,47	69,17	79,77	56,44	79,82	73,08	65,65	55,12
8. Training	78,40	28,10	79,71	19,71	78,98	12,25	74,42	19,75
9. Agricultural extension	84,64	12,70	84,74	17,97	89,98	17,75	76,08	12,75
B. Stages of Farming Activities								
1. Soil processing	87,05	38,14	96,64	46,94	85,88	9,75	89,32	11,05
2. Nurseries	74,57	50,70	79,10	60,44	75,12	32,25	67,92	38,42
3. Fertilization	78,16	51,30	77,97	50,30	70,15	27,01	68,48	35,08
4. Care /plant maintenance	71,30	60,14	83,10	66,44	60,08	50,68	59,64	46,75
5. Control of pests and diseases	84,77	32,44	90,77	25,10	87,72	15,08	82,98	17,97
6. Post Harvest Processing	83,38	83,70	-	-	61,88	68,42	-	-
7. Marketing of Crops	67,73	80,44	54,44	70,37	58,02	54,78	42,30	75,08

Note : M* : Men

W** : Women

3.2. Strategies for Overcoming Life Needs

In facing scarce resources (income), households perform coping strategies to maximize the welfare of the families.

3.2.1. Austerity Strategy

Austerity or saving strategy in term of food done by households in the village of Koto Masjid (86%) and in Pongkai Istiqomah (78%) was by reducing the needs for food purchase. Strategy to reduce expense for health was by choosing the place that charged lower cost. Some households in the both villages had free medical card (Healthy Indonesia Card) from Indonesia government.

Household's savings strategy to reduce education expense was still low. The choice taken in both villages was by reducing child pocket money. In the field of farming, the dominant saving strategy was by reducing the use of anorganic fertilizers for the plants and replacing them with manures or composts. Other savings made by households in the village of Koto Masjid was by reducing social donations while in the village of Pongkai Istiqomah was by reducing the use of electricity. The category of saving strategies by households is presented in Table 2.

Table 2. Distribution of Households (%) according to the Austerity Strategy

Category of Austerity Strategy	Koto Masjid Village (%)	Pongkai Istiqomah Village (%)
Low (0 - 33.33%)	46	38
Medium (33.34% - 66.67%)	54	62
High (66.68% - 100%)	0	0
Average score	36,56	38,09

Saving strategies, 54% of households in Koto Masjid village and 62% of households in Pongkai Istiqomah village, was categorized as moderate.

3.2.2. Resources Addition Strategies

Households utilized their own resources to increase income. Their leisure time after doing the main activities could be used to seek additional income. All family members could be empowered to earn income including children. In addition, families could utilize house yard to plant food or medicinal crops.

Moreover, to increase the income strategy, most of the housewives in Koto Masjid raised catfish to support household income. In Pongkai Istiqomah village, the involvement of housewives outside rubber plantation was not found. This condition was due to the limited field of business outside rubber plantations in this area. Limited access and knowledge on resources may be assumed to influence the strategies taken. According to Rogers in Rahardjo (1999), low level of peasant innovation concerns with three things: 1) Tendency of peasants to use methods in living that give high assurance to succeed and they are reluctant to try new ways that may lead to failure; 2) Scarce economic resources or improper application of technology and application of new technology is usually costly that makes the poor peasants reluctant to apply it; 3) Poor knowledge of peasants about technical issues and resources.

Table 3. Distribution of Households (%) by Resource Addition Strategy

Category Resources Addition Strategies	Koto Masjid Village (%)	Pongkai Istiqomah Village (%)
Low (0 - 33.33%)	82	90
Medium (33.34% - 66.67%)	18	10
High (66.68% - 100%)	0	0
Average score	25,25	25,10

The strategy of resources addition, 82% of households in Koto Masjid village and 90% in Pongkai Istiqomah village, was categorized as low.

3.2.3. Social Strategy

In the social field, using social networking was one of the household efforts to cope with the household problem. Generally, the social strategy is very helpful in overcoming the living difficulties. Besides that, the social support is also needed in facing economic problems.

In the field of food, most households in both villages asked for help to their relatives in facing the urgent needs for food. In the field of health, most households in both villages utilized health facilities for poor families (Healthy Indonesia Card) for treatment. In addition, the households also requested assistance from relatives if the household members

got sick. In the education sector, most households in both villages sought loans from relatives for school children's needs. In the field of farming, some households borrowed money from farmer group organizations or cooperations. In other social strategy, more than half of households in both villages, they often discussed about financial problems with relatives. Talking about financial issues with relatives is one of strategies to get social support.

Social strategy carried out by more than half of the households in both villages was categorized as low category. Social strategy category of the households is presented in Table 4.

Table 4. Distribution of Households (%) according to the Social Strategy

Category Social Strategy	Koto Masjid Village (%)	Pongkai Istiqomah Village (%)
Low (0 - 33.33%)	64	52
Medium (33.34% - 66.67%)	36	48
High (66.68% - 100%)	0	0
Average score	30,23	25,19

Social strategy is the efforts made by the head of the household / partner to meet the needs of the family through the use of social networks and seeking social support from the environment. The study reveals that the category of social strategies used by households in dealing with household economic problems was relatively low. Only a small proportion of households make use of social networks in overcoming household difficulties. This is due to the limited social network and social support that households can use in overcoming economic difficulties.

3.3. Household Welfare

Based on poverty line (Rp.360.324/capita/month) of Kampar Regency Statistical Center Bureau in 2015, it was found that 85.42% of the second generation resettlement households in Koto Masjid and 60% in Pongkai Istiqomah were categorized as prosperous households. The remaining 14.52% of them in Koto Masjid and 40% in Pongkai Istiqomah fell in category not prosperous (Table 5).

Table 5. Distribution of Households Based on The Level of Welfare according to Statistical Center Bureau Poverty Line Criteria

Welfare Criteria	Household of Koto Masjid Village (%)	Household of Pongkai Istiqomah Village (%)
Not Welfare	14,52	40,00
Welfare	85,48	60,00
Average income/capita/month	1.261.386	669.317

The poor households in Koto Masjid were those cultivating narrow land, 0.5 ha of land area. Within 0.5 ha area the productivity of rubber was also limited. According to the information of farmers, 0.5 ha of rubber plantation could produce 15-20 kg per week. The price of rubber varies from Rp. 8.000 to Rp 9.000 per kilogram depending on the quality of the rubber produced. In addition, the rubber farmers were very dependent on price determined by “toke” who came to the village to purchase.

4. Conclusion

This study has discussed the welfare, participation and compensation to communities in Koto Panjang that were involuntarily resettled because of the effect of dam construction in Koto Panjang. The empirical results showed that compensation had a significant positive effect on the welfare of households while people participation had no measurable effect on the welfare of households. It showed that provision for active household participation was lacking. To increase the welfare of displaced communities like those in Koto Panjang, the government should ensure that compensation is adequate and the households are actively involved in the resettlement process so that resettlement is conducted in a way that impacts the affected households and surrounding districts more positively.

The research indicated that in the second-generation households of resettlement in Koto Masjid and Pongkai Istiqomah, men were still dominant in access and control of farm management such as: land,

commodities, education, training, agricultural extension services, capital, credit, equipment, seeding or breeding, fertilizing, cropping pattern, pest and disease control, while women were more dominant in crop processing and marketing, while the roles shared by men and women were access and control in terms of information and maintenance.

The poverty experienced by households in Koto Masjid village was largely due to limited land ownership, while the poverty experienced by households in Pongkai Istiqomah village was due to the dependence of livelihoods on rubber plantation products, in addition to the limited field of other businesses in the village.

From the analysis that has been carried out, several policy implications are:

- a. To improve justice and equality of access and control between men (husbands) and women (wives) in the research villages, women's access and control need to be improved in the variables of land, capital, education, production facilities, credit, training, and counseling agriculture. Policy interventions from the government can facilitate in the form of providing production facilities, credit, extension programs and training for women.
- b. To improve the welfare of the community in the research village, where some households are poor households, it is necessary to have a government policy in the form of farming credit assistance. Fish farming is one of the fields of economic endeavor that many women and men are engaged in in Koto Masjid Village, and can provide higher income for households. The ease of obtaining capital with mild conditions and training that can provide skills, will encourage increased economic activities in the research area. Similar activities can also be carried out by households in Pongkai Istiqomah Village through technological improvement. In line with these efforts, infrastructure development that supports the running of the economy, such as roads, bridges and markets is important so that the distribution of goods

becomes relatively easier, cheaper and more efficient, especially in Pongkai Istiqomah Village.

- c. Further research is needed on the role of gender in the households of the first generation of settlers.

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