

FISHERIES TRANSMIGRATION IN NUCLEUS ESTATE SMALLHOLDER SCHEMES (NES) IN INDONESIA

by

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1. Introduction

During the Fifth Five-Year Development Plan, fisheries development has focused on the area of Java island which still has potential for developing fisheries resources.

Transmigration development aims at optimizing available manpower and at more equal population distribution in order to improve the standard of living; optimizing natural resources and regional development; and at creating employment opportunity.

Therefore, some transmigration schemes have been carried out during the Fifth Five-Year Development Plan. An example is the transmigration in fisheries scheme both in fishing and fishfarming. This scheme was set up jointly by the Ministry of Agriculture the Directorate General of Fisheries and the Ministry of Transmigration.

To participate in the scheme, about 90,000 transmigration households comprising 24,000 fishermen households and 66,000 fishfarmer households were targeted.

2. Fisheries Transmigration in Nucleus Estate Smallholder Scheme

The underlying principle behind the Nucleus Estate Smallholder Scheme (NES) approach is to create a relationship of interdependency between numerous small-scale and low technology producers and financially and technologically advanced large enterprises to achieve economic objectives which serve the interest of both parties. This approach has a built-in advantage of economies of scale in operation, while allowing a significant number of new smallholders in business-like operations. At present there are two types of transmigration in Fisheries scheme, one is for fishing and the other for aquaculture.

There are currently two types of transmigration in Fisheries scheme: one for fishing and the other for aquaculture.

(i) Transmigration in fishing scheme

Site Selection

The location should meet the following requirements:

- (a) be suitable to live in;
- (b) have good fisheries resources potential, especially tuna and skipjack in order to support fishing activities;

- (c) have available fishing infrastructure such as fishing ports or fish landing places, ice plants, cold storage, fuel supplier, fishing vessel workshops, clean water supplier and an auction hall.

Living Area

The living area required for this transmigration programme should be able to accommodate about 150 to 350 household fishermen. Every household should receive 0.75 hectares of land, 0.25 hectares for premises and 0.50 hectares for fisheries activities. Every household should have a house and facilities including clean water supply ready for use before they move in.

Fishing Facilities

The government provides each group of fishermen with one fishing boat unit of 7 to 15 GT including one package of fishing gear, additional fishing gear as well as operational inputs such as fuel, ice, food etc.

Each group comprises about 8 fishermen members, depending on the local fisheries conditions.

The nucleus should not own more than 20% of the total GT fishing vessels owned by both the nucleus and the plasm.

Candidate Selection

Candidates should come from highly densely populated areas as well as from over-exploited fishing grounds such as Java, Bali and Lombok Islands.

The candidates should:

- be in good health
- have sufficient background in fishing
- be married
- be Indonesian
- have a positive attitude
- be religious
- be able to read and write, and
- be between 20 and 35 years old

For this type of nucleus, the private companies, semi-government enterprises or cooperatives holding a fisheries licence may wish to apply.

(ii) Transmigration in brackishwater aquaculture scheme

Site Selection

The site should:

- (a) be located near a sea shore, be liveable and have tidal influences;
- (b) be technically feasible for brackishwater aquaculture activities; and

- (c) have good freshwater and sea water resources.

Living Area

The living area for this transmigration programme should be to accommodate about 150 to 350 household fishermen. Every household should receive 0.25 hectares of premises and 1 to 2 hectares of land for pond (tambak).

A house and housing facilities, including a clean water supply, should be ready for every household before moving.

Brackishwater Aquaculture Facilities

The government will provide every fishfarmer household with 1 - 2 hectares of brackishwater pond and one package of production input per crop. Nucleus ponds should not represent more than 10% of total ponds owned by the nucleus and the plasm. Secondary and tertiary canals are to be established by plasm and nucleus.

Candidate Selection

Candidates will be from highly densely populated areas and with limited land available for brackishwater aquaculture such as Java, Bali and Lombok Islands.

The candidates should:

- be in good health
- have a background in brackishwater aquaculture
- be married
- be Indonesian
- have a good attitude
- be religious
- be able to read and write, and
- be between 20-35 years old

For this type of nucleus, private companies, semi-government enterprises or cooperatives holding a fisheries licence may wish to apply.

3. Rights and Obligations

A. Government

i. Government rights

- Coordinating, regulating and monitoring project implementation
- Carrying out and monitoring credit repayment

ii. Government obligations

- Surveying and planning programmes and projects
- providing living areas
- providing business facilities
- issue principle licences and fishing licences

- developing infrastructure facilities for fishing
- reclaiming land for household purposes
- establishing house and housing facilities for transmigrants
- conducting workshops for transmigrants
- conducting feasibility studies
- appointing and approving nucleus companies
- fostering Technical Implementation Units for social, cultural, economic and technical aspects of fishing and culture
- issuing land owner certificates for house and housing facilities

B. Nucleus Company

i. Nucleus Rights

- Acquiring land for company purposes
- obtaining assistance for fishing facilities
- receiving credit repayment from fishermen/fishfarmers

ii. Nucleus Obligation

Conducting feasibility studies and design details aimed at:

- Developing business facilities
- signing letter of agreement with transmigrants and adhering to the agreement
- integrating the transmigrants in business management and technical aspects of fishing/culture
- providing and distributing production inputs for fishing or fish culture
- buying transmigrants' fish/shrimp products at agreed price
- repaying credit according to the agreement.

4. Financial

Financial aspects of the fisheries transmigration scheme falls under the responsibility of the three parties involved; the Nucleus company; the plasm or transmigrants; and the Government. The main responsibility of the Government is to provide infrastructure facilities.

The following provide a detailed breakdown of the financial aspects:

Government responsibility:

- (1) Area/site preparation
- (2) Master of living plan
- (3) Preparation of living area
- (4) Housing development
- (5) Infrastructure for pond/tambak including:
 - (a) primary canal
 - (b) secondary canal
 - (c) tertiary canal
 - (d) main irrigation gate
- (6) Fish landing place

- (7) Production inputs for the first one crop including:
 - (a) Seed
 - (b) Feed
 - (c) Pesticide
 - (d) Fuel for water pump/genset
- (8) Food and non-food for 12 months
- (9) Encouragement and mobility
- (10) Training for transmigrants
- (11) Placement and integration
- (12) Monitoring and control

The Nucleus company has to provide the following:

- (1) Processing unit (ice plant, cold storage)
- (2) Feed plant
- (3) Hatchery
- (4) Business unit for aquaculture/fishing
- (5) Other business facilities

The Transmigrant - plasm has to provide (through credit) the following:

- (1) Pond (tambak) or fishing unit
- (2) Pond (tambak) equipment or fishing gears
- (3) Water pump and genset

5. Performance of Fisheries Transmigration Scheme

The Scheme

Based on the agreement between the Ministry of Transmigration and the Ministry of Agriculture c.q. Directorate General of Fisheries, the fisheries transmigration scheme was launched in 1990/1991. It started with the implementation of brackishwater aquaculture transmigration in a nucleus smallholder scheme in Jawai, West Kalimantan province.

The following figure summarizes the performances of fisheries transmigration schemes:

Figure 1

A. Fishfarmer transmigration			
-	West Kalimantan	(Jawai)	400 Households
-	West Nusa Tenggara Barat	(Waworada)	542 Households
B. Fishermen transmigration			
-	Riau	(Air Raja)	280 Households
-	Maluku	(Benjina)	134 Households
-	Irian Jaya	(Wimro)	50 Households
-	Di Aceh	(Jaboi)	100 Households
		Total	1,506 Households

A. Fishfarmer transmigration

1. Brackishwater Aquaculture Transmigration in Nucleus Smallholder (NES) Scheme, Jawai, West Kalimantan

This Scheme was in operation in June 1991 and the first harvest was in October 1991. The location was Jawai village, Pemangkat subdistrict, Sambas District, West Kalimantan province with 1,000 ha total of land provided by the Governor of West Kalimantan.

The company build cold storage facilities with 100 ton production capacity and a hatchery production capacity of 5 million seeds.

According to the plan, a total of 400 households will be settled in the transmigration area: the first group of 150 households in 1991/1992; the second group of 150 households in 1992/1993; and the third group of 100 households currently.

Development of the first 150 ponds (tambak) of 0.50 ha each started in 1991/1992 and followed with the second 150 ponds (tambak) also 0.50 ha in 1992/1993. Another 100 ponds of 0.50 ha each are being developed.

2. Brackishwater Aquaculture Transmigration Nucleus Estate Smallholder Scheme in Waworada, West Nusa Tenggara

This Scheme was in operation in 1991 with the first harvest in December 1992. The location was Waworada village, Laju village, Doro'oo village and Rope village, Bima District, West Nusa Tenggara province.

The nucleus company has built cold storage with 3 ton capacity per day, one small hatchery and one feed plant.

The scheme targeted 1,000 households for the transmigration area. At present, 542 households live in the area and 542 ponds of 0.48 ha each have already been developed.

The scheme aimed at harvesting 4,000 kg/ha/crop; however, first harvest was only 2,6000 kg/ha/crop or 65% of the target.

B. Fishermen Transmigration

3. Seaweed Culture Transmigration in Nucleus Smallholder (NES) Scheme, Air Raja Island, Riau

This scheme is located in Air Raja Island, Riau province. At present 280 households live in this area as forecast. Every household has been granted 80 rafts 5 x 2.5 m each as well as a house with 0.50 ha of land.

3. Fishermen Transmigration in Benjuina, Maluku

This scheme is located in Benjuina, South East Maluku District, Maluku Province. Total land allocated was 1,000 ha. The plan is to move in 500 households gradually over a five-year period. The scheme was started in 1990/1991. Currently, 130 households live in the transmigration area.

Each fisherman has to take on-the-job training programmes on the nucleus company fishing vessel. On-the-job training programmes aim at training and familiarizing the transmigrant with the introduced fishing methods and gears as well as with new fishing grounds. During the programme, the transmigrants also received a lump sum of Rp. 70,000 per month and fishing incentive Rp. 1,750 per day for those fishing on top of the one-year living support funds provided by government. At present, 15 fishing vessels including fishing gears have been provided for transmigrants through credit.

The following lists support facilities provided by the nucleus company:

- (a) Fish meal plant
- (b) Fish fillet and salted fish facilities
- (c) Processing facilities
- (d) Ice plant
- (e) Cold storage
- (f) Boat builder
- (g) Dock yard
- (h) Workshop
- (i) Jetty, etc.

5. Fishermen transmigration in Jaboi, Aceh province

This scheme is located in Jaboi, Sabang District, Aceh province. Total land reserved for this scheme is 40 ha, 25 ha for housing and 15 ha for multi purposes.

The scheme aimed at moving in 100 households by the end of 1994. At present, 41 households live in that area, fishing and working at cold storage facilities owned by the nucleus company.

There are 10 purse seiners, 10 liners and one multipurpose boat. Every 20 selected households will operate a 25 GT purse seiner provided by a revolving fund schemes.

6. Fishermen transmigration in Wimro, Irian Jaya

The scheme is located in Wimro, Manokwari District, Irian Jaya province. At present there are 42 households, most of which work as crew for fishing vessels owned by the nucleus company.

The following are supporting facilities provided by the nucleus company:

- (a) Processing facilities
- (b) Ice plant
- (c) Cold storage
- (d) Boat builder
- (e) Dock yard and slipway
- (f) Workshop
- (g) Jetty, etc.

Direct Benefit

Based on the available data, the following lists the direct benefit of the two types of fisheries transmigration scheme in Indonesia.

1. Brackishwater Aquaculture Transmigration in NES Scheme, Jawai, West Kalimantan

Brackishwater Aquaculture Transmigration in NES Scheme, located in Jawai, West Kalimantan, was recently evaluated.

- (a) The programme was started in 1990/1991. From the first stocking in June 1991 (density 4 to 6 seeds/m²), the harvest in October 1991 from the 28 ponds (or 14 ha) produced 13,484.3 kg in volume with 32 shrimps per kg and Rp. 128,706,840.00 in value (US \$1.00 = Rp. 2,000). The highest income received by plasm was Rp. 1,982,425.00 and the lowest was Rp. 805,629.00.
- (b) The second stocking took place in early June 1992 (density 20 seeds/m²), and the harvest in October 1992 from 19 ponds or 9.5 ha produced 25,753.95 kg in volume (size 30) and Rp. 310,813,986.00 in value. The highest income received by the plasm was Rp. 9,556,730.00 and the lowest was Rp. 1,669,533.00.
- (c) From the third stocking which took place in February 1993 (density 15 seeds/m²), the 73 ponds or 36.5 ha produced 91,250 kg in volume and Rp. 1,070,818,750.00 in value. The highest income received by the plasm was Rp. 7,500,000.00 and the lowest income was Rp. 600,000.00
- (d) The first frozen shrimps were exported in January 1993 with 115 tons in volume and US \$1,195,063.00 in value.

Frozen shrimp exports from this Programme from 27 January to 6 September 1993 are as follows:

Date	Destination	Volume (kg)	Value (US \$)
27/01/93	Japan	18,864	182,936.16
15/03/93	Singapore	13,164	101,011.44
27/03/93	Japan	10,303.20	115,203.60
30/04/93	Japan	10,594.80	88,653.74
31/05/93	Japan	9,363.60	97,453.74
01/07/93	Japan	20,520	227,899.99
25/07/93	Japan	10,584	135,598.75
06/09/93	Japan	21,600	246,303.72
TOTAL		114,993.60	1,195,03.00

2. Fishermen transmigration in NES scheme, Wimro, Irian Jaya

The available evaluation report for this programme mentioned that the lowest income received by the plasm was Rp. 295,000.00 per month depending on the catch and premium.

The programme is in progress and the Nucleus Company will increase its number of boats from 36 to 93 fishing boats. The 57 additional gillnet boats will be procured by credit.

6. Conclusion

The implementation of the fisheries transmigration especially brackishwater aquaculture transmigration in NES Scheme apparently is the best solution to overcome the problems in managing fisheries resources and to improving fisheries production. Further it can contribute directly to improving government revenue through fisheries exports.

In future, it would be a good idea to consider developing this Scheme while bearing in mind that presently there is no available specific credit scheme for the fisheries transmigrants schemes.

It is important to note the failure of the grass-roots level to borrow money from the bank through existing procedures in Indonesia due to their limited accessibility. In this regard the Directorate General of Fisheries of Indonesia has taken several steps to overcome this problem: one is to establish integrated and consolidated approaches together with institutions concerned (the Ministry of Transmigration, the Ministry of Cooperatives, the Ministry of Public Works as well as the banking sector) and to cooperate with international agencies to study a suitable credit scheme. However, some time may be necessary to come up with the appropriate credit scheme.