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IMPACTS OF INTEGRATED RURAL DEVELOPMENT (IRD) TOWARDS TRADITIONAL VILLAGE ECONOMY IN KETENGAH, TERENGGANU, MALAYSIA

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Abstract

This study investigates the anticipated impacts of an integrated economy on six (6) traditional villages in the District of Dungun, Terengganu, Malaysia, which villages have undergone “Integrated Rural Development” (IRD). The IRD has promoted a continual intervention and collaboration process that involved external parties, including government agencies, to improve the rural local economy and the villagers’ quality of life. The villagers’ aspiration to improve their economic wealth was blended carefully with the preservation of local values through local distribution, thus reducing rural-urban incongruity. Alternatives were also sought to strengthen and use natural resources. The integrated economic sectors assessed in these villages were agriculture, livestock, aquaculture, small-and-medium entrepreneurs (SME) industries, and rural tourism. This paper seeks to evaluate the impacts of these economies on the concept of IRD by using Creative Index Analysis (C.I) in determining the best practice framework. By emphasising the principle of “best value for money”, CI was used to measure the value of anticipated impact, particularly the benefits that will be received by the people against the cost of development and operation for a period of its lifespan. A 1.0 creative index value refer to a rural area that has an economic integration potential and disparities that were overcome by the analysis. Most importantly, more than 78% of the 114 respondents from this area agreed with the project implementation. To ensure the impacts of the IRD project, the development framework proposes the consideration of at least three potential aspects within five years of implementation: training, new and existing development, and assistance in product marketing

Keywords: Rural, Integrated Rural Development, Feasibility, Creative Index Analysis

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INTRODUCTION

The Malaysian Rural Development Policy indicates that the main vision of rural area developments is toward a “*prosperous, inclusive and holistic rural area.*” Rural settlements in Malaysia can be defined as settlements that have a total population of fewer than 10,000 people and those whose majority of the population is involved in agricultural sectors as their main economic activity. Traditional villages that comprise fishing villages are those located along the coast, while agricultural-based villages are those whose most villagers are involved in agriculture and other economic activities related to agriculture. These villages have long existed through natural growth, and many are scattered in nature without definite boundaries. These villages are distributed along the main transportation networks and rivers.

This paper examines the anticipated impacts of the Integrated Rural Development (IRD) implementation on the rural economy of traditional villages in the District of Dungun, Terengganu, Malaysia, which is a pilot project initiated by the Ministry of Rural Development. The projects in this area are in line with the national policy as their visions are to improve the rural economy.

An integrated rural development can be defined as a series of mutually supporting (inter-related), agricultural and non-agricultural activities oriented towards a stated objective that involves improvements in the rural system as a whole. The IRD seeks to improve productivity, incomes, infrastructure, and social development within a rural area. The development is based on the principle of indigenous development and growth, community involvement, and decentralised government (Tony Gore, 2006).

Another key element of IRD is striking a balance between economic, social, and environmental objectives. This orientation emerges from the definition of integrated rural development projects by the World Bank: “Rural development programs or projects are intended to provide a sustained increase in the output and the level of living of a significant proportion of the rural poor in a given area” (Baltimore, 1975).

The IRD concept used in this study refers to the continual process that involves the interference of external parties and is based on the aspiration of the local population, which aims to improve the quality of life of the target group and preserve local values through local distribution and redistribution. At least 5 (five) components of economic activities are involved in this study, namely (1) agriculture, (2) livestock, (3) aquaculture, (4) small-and-medium industries, and (5) tourism.

Six villages were selected within the district of Dungun, Terengganu, Malaysia (Figure 1). The study area covers Kampung Talong, Kampung Kuala Jengai, Kampung Pasir Raja, Kampung Syukur, Kampung Jongok Batu and Kampung Minda. The locations of these traditional villages have been chosen by

KETENGAH for the IRD pilot projects. The villages selected were in remote areas, hence the constraints of accessibility. However, the richness of the villages' natural resources and existing economic activities provide opportunities for the expansion of economic activities in the study area. In terms of land use, many of the areas are not developed, thus providing the best opportunities for IRD implementations.

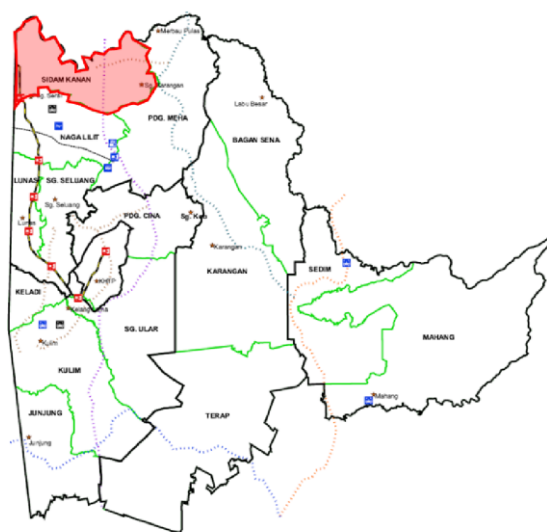


Figure 1: Location of Study Area

To investigate the impacts of the IRD in these villages, the following techniques of analysis were used: (1) SWOT analysis to identify Strengths, Weakness, Opportunities and Threats, (2) gap analysis to determine the current achievement and existing economy activities with the proposed project, and (3) Creativity Index (C.I) analysis to determine the implementation of the new project that has been structured in accordance to the principle of best value for money.

Approximately 80% of the land in the study area is undeveloped and therefore was considered by the ministry for IRD implementation. Appropriate measures and incentives must be chosen in light of district particularities. The integrated operation moreover requires effective horizontal coordination at a regional level (Lembaga Kemajuan Terengganu Tengah, KETENGAH) and for this multisectoral-oriented planning, control, and administration units with far-reaching competencies in the region concerned must be set up first.

METHODOLOGY

Creativity Index and Return on Investment analysis were devised to evaluate the proposed projects in the villagers. These analyses were preceded by interviews with the entrepreneurs and villagers on the sites, subject to the projects they were taking part.

The data obtained from the site visit interviews were codified in a SWOT matrix. A SWOT analysis is considered the most accepted tool in strategic planning for its simplicity and practicality (Pickton & Wright, 1998). The analysis assesses four elements, namely “strengths”, “weaknesses”, “opportunities”, and “threats” (Gurel & Tat, 2017). Aside from its primary purpose for constructing the development plan, the SWOT analysis was also used inductively in the reasoning components of the development plan.

Another tool used to provide a descriptive context for the development plan was a gap analysis. A gap analysis conceptually compares current practices against respective benchmarks (Balm, 1996). In this study, the gap analysis was devised to address the “gap” or weakness of the existing practices and propose possible solutions for the targeted projects, the purpose being to empower the development plan.

A CI analysis provided a numerical evaluation for this study. The analysis was used to assess the targeted projects of the development plan. CI was introduced in the Eleventh Malaysia Plan by the Economic Plan Unit of the Prime Minister’s Department of Malaysia as a project selection tool. In this analysis, the impact of the proposed project within a set period was estimated in proportion to the cost of development and operation of the proposed projects. A high CI value indicates a high impact on monetary value compared to the budget. In this study, the targeted projects were evaluated in terms of the best value for money, which lead to the projects being prioritised (Figure 2).

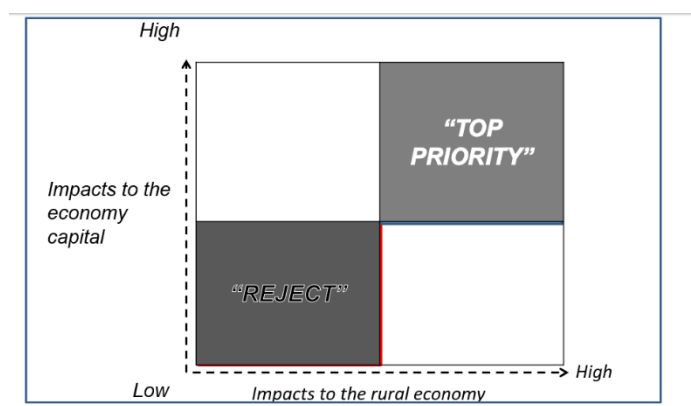


Figure 2: Creative Index (C.I) Measurement

A quality project will produce a high impact on the people at a low cost to the government. In this study, C.I was used as a tool to measure the ability of projects to provide high-impact value to the people at a low cost to the government. Projects that resulted in higher foreseeable impact were considered feasible.

SWOT ANALYSIS

The six villages involved in this study can be characterised as remote rural areas with natural rainforests in their surrounding. The villagers thrive on traditional agriculture activities such as raising swamp buffalos and freshwater fish farming in ponds, while also serving the growing interest in their ecotourism attractions. As noted by Arshad and Shamsudin (1997), the local economy is low in productivity, basic infrastructure, and market imperfections, mostly due to a lack of accessibility and sustaining frequent flooding (Table 1). KETENGAH's commitment to implementing the IRD was to exploit the quality and prospects of the villages while tackling the difficulties. Correspondingly, the villagers shall bank upon the benefits brought by the development plan.

Table 1: SWOT Analysis Findings

SWOT	Findings
Strength	<ul style="list-style-type: none"> ● Availability and undeveloped lands ● Attractive natural resources ● Existing buffalo farms ● Integrated aquaculture projects ● Strong networking between local leadership and villagers ● Effective promotion
Weakness	<ul style="list-style-type: none"> ● Conventional use of equipment ● Lack of skilled manpower ● Poor marketing system ● Poor networking between villagers and agencies
Opportunities	<ul style="list-style-type: none"> ● High supply and demand ● Tourism attraction ● Create job opportunities ● Active local participation
Threat	<ul style="list-style-type: none"> ● Expensive raw materials ● Natural Disaster ● Limited marketing due to the low accessibility ● Financial aids

GAP ANALYSIS

The immediate discussion on gap analysis for this study is divided into five sectors. For agriculture, the gap identified is the lack of machinery, and irrigation, as well as low yields due to inefficient management knowledge. This can be solved by purchasing machinery to achieve yields twice a year. Fertilizer subsidising and pruning courses may also help in alleviating the issues.

The targeted project for small and medium industries focused on the enhancement of skills and knowledge among the participants and funds for the Village Entrepreneur Carnival. A gap was identified in terms of a lack of knowledge in financial management and an insufficient marketing system. Providing courses and training to entrepreneurs while monitoring their business growth will facilitate expanding their marketing prospects.

The livestock and aquaculture project targeted cattle and buffalo farming and an enhancement of the infrastructure of the integrated fishing system. The latter was to be achieved by supplying the activity with the high demand from the market, besides having the existing 32 ponds as a potential for freshwater fish rearing. With regard to its potential, the availability of highly interested youth villagers may become one of the factors in achieving the targeted project. The gap identified includes a lack of knowledge and an incomplete ecosystem of production in livestock management. These shortcomings require high capital investment. Programmes such as mentor-mentee and the diversification of activities may help reduce the gap.

The developments of tourism at Kampung Shukor and Kampung Pasir Raja have been identified as among the projects that can give high impacts on the community because of an existing waterfall and homestay. However, a lack of activities and facilities are among the gaps identified in developing this sector. Hence, the provision of more water activities and a campsite equipped with facilities may attract more tourists to the area.

CREATIVITY INDEX (CI) ANALYSIS

Creativity Index analysis is an instrument used by the government to determine the implementation of a planned project. By emphasising the principle of “best value for money”, CI measures the value of impact whose benefits will be received by people compared to the cost of the development and operation of a project for a period of time. The costs calculated in the CI for this study included development costs and operating costs. The impact was measured according to several impact parameters namely income, cost of living, convenience, and comfort, health, peace and safety, harmony, recreation, and a sustainable environment. At the time of writing this report, the measured impact is the main impact that has a direct impact on villagers; it has been summarised as an increase in the value of sales revenue, cost reduction and savings, and an increase and

revenue generation. The process of calculating the CI for a project is the total impact divided by the total cost. The CI value also means the ringgit value of the impact return for each ringgit spent on one project.

For agriculture, more *Citrus reticulata* can be produced with the number of yields that can achieve RM250,000 when sending the participants to the pruning and tree care course with the CI value of 18.15. If the fertiliser of these crops were subsidised to 50% and providing the pesticides with the systematic planting technique, the yield may increase up to RM600,000 with a CI value of 34.28 by the fifth year of implementation.

With an RM42,000 cost to send participants on the livestock courses in the first year, the sales market may reach RM172,500 with a CI value of 17.25, and this amount will be sustained until the fifth year of implementation. An aquaculture CI value may reach 12.46 with the implementation of a five-year project of freshwater fish rearing by upgrading the existing area with infrastructure, including a drainage system, a pump water house, and a pool structure. The total cost for the project proposed is RM160,000, but the impact in terms of income may reach RM480,000.

The CI analysis for small and medium industries shows that the development skills programme in the first year may reach the value of 2.66 with the involvement of Local Action Groups (LAG) from TEKUN Nasional, People's Trust Council (MARA), Malaysia Entrepreneur Development Center (MEDEC) and Small Medium Industry Development Center (SMIDEC). In the fifth year, with an average sale of RM17,000, the CI value may reach 3.75. While for tourism, the CI value in the fifth year of implementation for the proposed chalet development and upgrading of the infrastructure and facilities in Kampung Pasir Raja and Kampung Shukor may reach 5.75 with a total cost of RM 240,000 and income of RM 2,172,000.

IRD IMPLEMENTATION GUIDELINES FOR KETENGAH

Any kind of development proposed for agriculture must obtain land approval from the local authority. Important aspects that need to be considered are as follows: (1) a 3-metre buffer zone needs to be provided from the proposed project area; (2) permanent farming is not allowed due to the temporary land status; (3) the approval needs to be renewed. The provision of machinery for the crops was suggested to be monitored by KETENGAH annually. In agriculture, pesticides are used to kill pests and insects that attack crops and harm them. While pesticides benefit crops, they also impose a serious negative impact on the environment (Mahmood et al., 2016).

In terms of sustainability, farmers are highly recommended to use organic pesticides and fertilisers to reduce the environmental effect on the land area. The application and maintenance of heavy machinery to improve agriculture

need to be recorded properly to avoid damage. The machinery must be used only by licensed skilled workers.

The livestock sector proposed courses that need to be attended by the villagers, and the participants selected must meet specific criteria because of the high cost of each course. The participants must meet the requirements of age, be local people, be financially stable to sustain the livestock project and be qualified for the micro-loan provided by *Tabung Ekonomi Belia Skim Belia Tani*.

The panel selected must be among qualified officers with a minimum of 30 years in livestock and be monitored by *Jabatan Perkhidmatan Veterinar (JPV)*. The participants' details must be recorded and monitored from the early stage and after the end of the course. The integrated food supply that manages livestock food, vaccine, food container, and other important needs for livestock must be centralised, and the sales revenue can be used to send more participants to the courses offered to encourage more villagers to be involved in the livestock sector.

Linkages between the food processing industry with the farmers need to be strengthened to ensure that they get the food supply from the farmers, hence providing opportunities for the farmers to expand their income. The small-scale factories need to focus on the needs of the local livestock farmers and the data management of livestock and online sales. These activities need to be controlled by skilled workers, especially youth.

It is important to track and record the integrated livestock sales to minimise loss. A Memorandum of Understanding (MOU) between ruminant breeders and the estate needs to be signed and initiated by KETENGAH so that the estate will be given incentives for tax reduction on the land used for grazing.

The aquaculture sector proposed a rearing cage for freshwater fish. The construction of the cage underneath water must not interfere with the flow of water, and the proposed area must not interfere with the boat or any water transport movement. The same applies to agricultural economic activities. Farmers need to ensure that the water is not polluted while doing this activity and as a result, 20 meters of buffer zone need to be built from the breeding area. Sewage from aquaculture activities must be treated before it flows to the river and needs to be advised by *Jabatan Alam Sekitar (JAS)* for the guidelines. All construction structures must obey the Act of *Undang-undang Kecil Bangunan Seragam 1984*.

The construction of the breeding centre needs to be equipped with important tanks for a fish breeding process, such as the main tank, generator, water pump, ventilators, and water reservoir tank. In addition, the induction of fish spawning may also help in generating more income for the aquaculture sector. Most importantly, a quality master should be selected to obtain quality seeds. The recommended age for males is 4 months with 300–600 grams while

for females is 5 months with 400–800 grams. Hormone needs to be used to stimulate the gonad and encourage the ovulation process. Hormone dosage, timing, and amount need to be considered to obtain the best result.

The small and medium industry sectors emphasised the need for the villagers to attend several courses to ensure effective production.

Financial management, accounting, and acquisition are examples of courses that the villagers can be exposed to at least once in 6 months. Another course is effective marketing strategies by monitoring the achievement in one year to ensure the business runs smoothly according to the training. Skill and development programs may help in improving small and medium industry workers' skills by providing business clinic, seminars, training, and aids.

MARA and MEDEC (*Pusat Pembangunan Usahawan Malaysia*) are agencies that can provide courses on ISO 9000 and knowledge related to business. The location of the integrated centre for village products needs to be identified, and cooperation between *Jawatankuasa Kediaman dan Keselamatan Kampung* (JKKK) may help collect the villagers' products that are currently produced scattered in the IRD-implemented villages. Appropriation funds need to be distributed fairly and equitably by KETENGAH so that a carnival can be organised for the entrepreneurs at least twice a year. This carnival may help entrepreneurs market and establish their products.

The tourism economy sector proposed in this IRD must not be against the original function of the existing river. A 15-metre buffer zone needs to be provided for recreation developments in this area. Safety features like signage and buoy need to be provided for the water recreation activities, and the boats to be used for these activities require a four-stroke engine for controllable speed and to avoid the creation of waves at the water recreation area. The structure of the boats must be collapsible and able to release water during a flood. The floating restaurant proposed needs to take into account the location and application of the jetty construction and needs to get approval from JPS to prevent erosion.

IMPACTS OF INTEGRATED RURAL TOURISM ON THE TRADITIONAL VILLAGE

The impact of Integrated Rural Tourism on the Traditional Village in KETENGAH was identified from the analyses and output from the site visits for the years 2020 and 2021. For the aquaculture project, 20 units of fish nets and PH measuring tools were given to 20 participants of freshwater fishpond breeders. In addition, 110,000 fish seeds and 880 bags of fish food were given to the participants. All the outcomes initiated by KETENGAH were then measured in terms of impacts for the years 2020 and 2021. Because this project is located in Terengganu, on a bigger scale, the aquaculture economy has given impacts by providing as much as 13 tonnes of protein sources to the Terengganu state in 2020

and 11 tonnes in 2021. The reduction of sources between 2020 and 2021 was due to the Movement Control Order (MCO) following the pandemic Covid-19, which also affected the participants in the village and the aquaculture economy. However, this sector is expected to rise again in 2022. In terms of income, the aquaculture economy project has provided an average income of RM700 to RM1,500 per month.

For the ruminant poultry, 3 units of buffalo stables, 2 units of goat shelters, and 1 unit of chicken coops were targeted to give benefits to 8 villagers. The impact of this output can be seen from the provision of livestock management facilities to help develop the economic activities of the population. For the small and medium industry sector, 48 units of business tools and 16 units of shop sign boards were expected to give benefits to 16 entrepreneurs. This initiative has given impacts by increasing the villagers' income from RM60 to RM300 per day for the lowest (500% increment) and RM1,200 to RM2,000 per day for the highest (66.6% increment).

Tourism was another economic component measured to assess the impact of the IRD. For the homestay project, 20 units of homestay were restored, and this output is expected to benefit 20 participants in the village. This initiative also increased the participants' income from RM500 to RM800 per month. According to the homestay owner, tourism is one of the most badly affected sectors during the MCO because people were not allowed to cross country and the pandemic recorded no tourist arrival for almost two years. Besides helping individual homestay owners, KETENGAH also provided the following public facilities in the village tourism area: one unit of surau and one unit of a public toilet in Sungai Kelemin Kampung Minda. The provision of these public facilities has provided comfort to tourists and encouraged revisits.

Each of the villages involved in the IRD has its distinct potential in terms of original character and natural resources. Each of the potentials identified was used to upgrade the existing activity and introduce new economic activities. Village administrative institutions are one of the potentials of every village covered in this study.

The connection and cooperation between all villages may ease the IRD concept to be implemented. Additionally, the IRD could potentially expand job opportunities to all the youth and villagers. Two years into implementing the concept in the village, all the projects from all economic sectors benefited the participants. Having all the economic activities from all sectors may create job opportunities that may enhance the villagers' economy. Employment opportunities may help solve social and unemployment problems among the youth in the villages.

Table 2: Impact of Implementation of IRD Projects

Component	Impacts
Aquaculture livestock	<ul style="list-style-type: none"> ● Provide additional protein sources to the state of Terengganu as much as: <ul style="list-style-type: none"> ● 2020–13 tonnes ● 2021–11 tonnes
Ruminant and Poultry	<ul style="list-style-type: none"> ● Provided an average income from RM700 per month to RM1500 per month ● Provided livestock management facilities to help develop the economic activities of the population
Business Premises	<ul style="list-style-type: none"> ● Increased the average income lowest from RM60 per day to RM300 per day (500%) and highest from RM 1200 per day to RM 2000 per day (66.6%)
Tourism	<ul style="list-style-type: none"> ● Increased the income for homestay operators from RM500 per month to RM800 per month ● Provided comfort to visitors

CONCLUSION

From the analysis, the IRD project proved to have given positive impacts on the Traditional Village KETENGAH area on several factors. The SWOT analysis found that the study areas have strengths and potentials that may facilitate the success of the IRD. Whereas, the CI value for all the projects exceeded 1.0. More importantly, the GAP analysis showed that all the gaps can be addressed. IRD is a project involving the cooperation of more than one agency. Networking and relationship between agencies were found to be excellent; KETENGAH as LAG has played a crucial role in monitoring the IRD project. IRD is also a project that requires active participation from the villagers. Seventy percent of the villagers agreed that the implemented projects are many that lead to the overall success of the programme. However, all the projects must follow the guidelines proposed by the agencies in order to ensure their effectiveness.

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