GOVERNMENT OF MALAYSIA

FEASIBILITY STUDY ON RATIONALIZATION AND CROP DIVERSIFICATION IN NON-GRANARY IRRIGATED AREAS IN MALAYSIA

Volume 5-2

State Report - Kedah

October 1990

JAPAN INTERNATIONAL COOPERATION AGENCY

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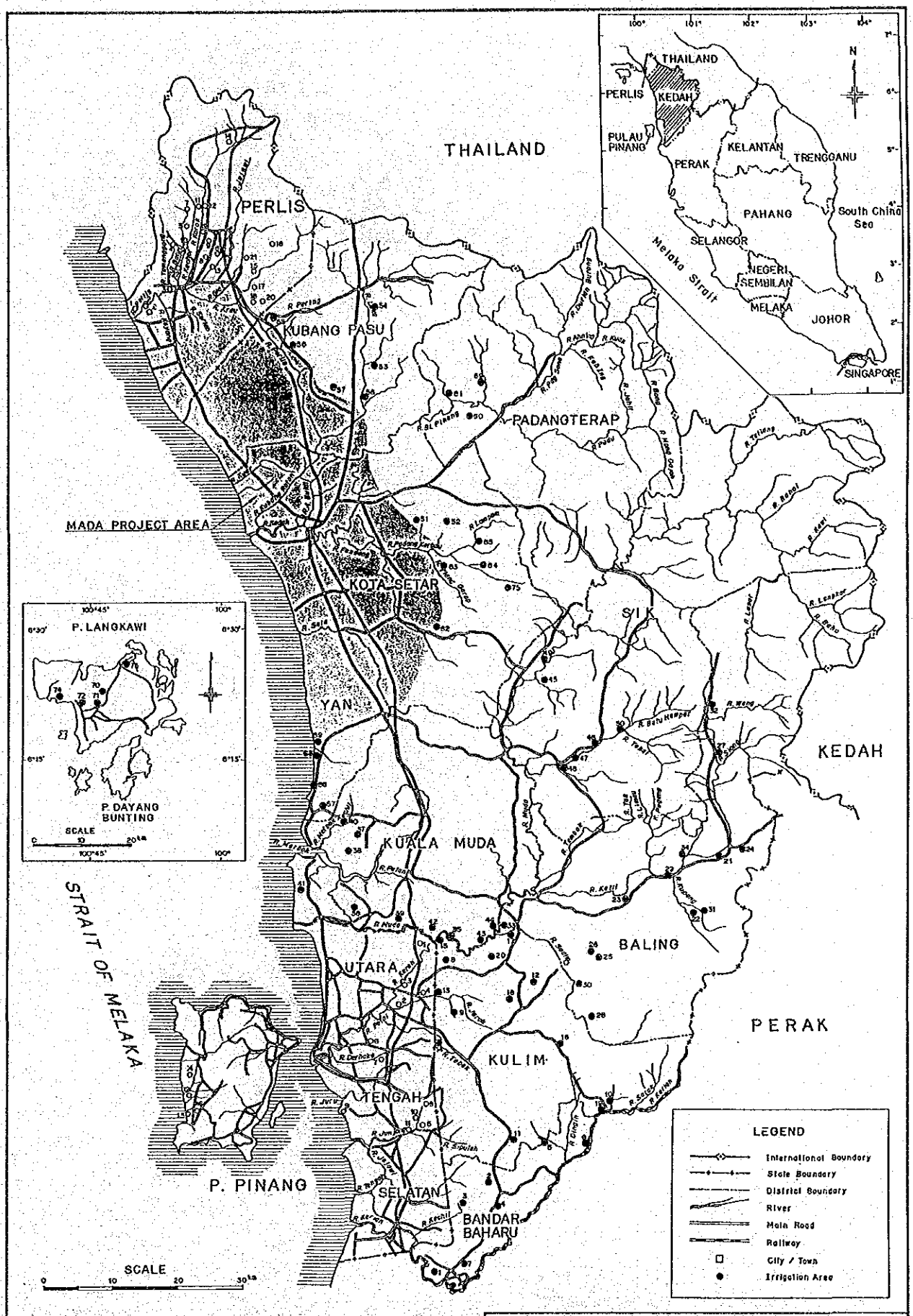

Location of Non-granary Irrigation Schemes

Kedah

FEASIBILITY STUDY ON RATIONALIZATION AND CROP DIVERSIFICATION IN NON-GRANARY IRRIGATED AREAS IN MALAYSIA

Japan International Cooperation Agency

Feasibility Study on Rationalization and Crop Diversification in Non-granary Irrigated Areas in Malaysia

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State Report - Kedah

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1. INTRODUCTION

This is the State Report - Kedah, Volume 5-2, of the Final Report for Feasibility Study on Rationalization and Crop Diversification in Non-granary Irrigated Areas in Malaysia. This report includes the criteria, procedure and results of evaluation of crop diversification potential of non-granary irrigation schemes in the State of Kedah.

Detailed information on the criteria and procedure for evaluation is presented in Volume 2 of the Final Report, and the results of evaluation of crop diversification potential for each scheme are given in the Appendix attached to this Volume.

2. GENERAL CONDITIONS

2.1 Socio-economic Situation

Kedah is one of the border states of the north of the Peninsular to its neighbour Thailand. The Sungai Sanglang marks the boundary with Perlis to the north, and the Sungai Muda with Pulau Pinang to the south. The Sungai Krian forms the State's boundary with Perak. The Langkawi group of islands forms part of the State. The total area is 9,326 km^2. There are 11 administrative districts. The population estimated was 1,211,700 persons for 1985 and 1,271,300 persons for 1988. The population density in 1988 was 135 person/km^2. Rural population ratio in 1988 reduced by 1% from 85% in 1985. The proportion of population by ethnic group in 1987 was 73% for Bumiputera, 18% for Chinese, 8% for Indian and 1% for others.

In Kedah, the total GDP in 1988 was M$3,121 million at 1978 constant prices. Sectoral contribution to GDP was 44% from agriculture, 32% from services and 15% from manufacturing. Per capita GDP was M$2,238 in 1986 and M$2,431 in 1988 with the big difference compared with the nation's average of M$3,551 in 1986 and M$3,858 in 1988. According to the Household Income Surveys, the incidence of poverty in 1984 was the first in number, 93,000 poor households, and the second in proportion, 36.6% of 254,100 total households, throughout the country. This situation was improved to some extent till 1987. The mean monthly income increased from M$690 to M$718, while the number of poor households went down to 82,100 and the declining incidence of poverty came to 31.3% of the total households of 262,300.

In 1985 the coverage of electricity services was 60.9% of the total population, while that of piped water supply services was 95.0% in urban areas and 57.7% in rural areas. The road length amounted to 3,230 km having road network density of 340 m/km^2 and per capita road length of 2,670 m every 1,000 population. There were 197 motor vehicles registered per 1,000 population. The State kept 1.9 doctors

and 1.6 acute care hospital beds per 1,000 population. On an average, 24,300 rural people were covered by one health center. The infant mortality rate was 1.9 per 1,000 population.

The revised allocation of development expenditure from the Federal Government and NFPEs amounted to M$2,350 million during the 5MP period. This accounted for 7.4% of the development expenditure allocated to all the States. Development activities in the State are principally in the hands of the Kedah State Development Corporation (PKNK), the Kedah Regional Development Authority (KEDA) and the Muda Agricultural Development Authority (MADA). The main thrusts of PKNK are in the fields of agriculture, industry, housing and tourism. At present, PKNK is involved in sugarcane factory to process cane sugar grown in the northern part of the State. The main responsibilities of MADA which is primarily concerned with the successful development and exploitation of the Muda Irrigation Project are: (1) to prepare the necessary facilities and create a suitable environment for restructuring the farming society in the Muda area, (2) to operate and maintain successfully the various physical infrastructures associated with the Project, and (3) to produce food surplus for fulfilling national requirements. In general, KEDA aims to upgrade, change the way of life and improve the environment of the rural communities outside the MADA area. Emphasis is given to the promotion of the commercial planting of coffee, fruit trees and cash crops in newly developed land.

2.2 Present Agriculture

In the State, about 464,700 ha of land are used for agricultural purposes occupying 49% of the State's territory. Such land use condition in Kedah is featured by the largest area of paddy cultivation in the country. Its coverage is 145,180 ha including MADA area and accounts for 31% of the total farm land. In harmony with natural circumstance of Kedah, rubber planting is also predominant covering 59,710 ha while planted areas of other major tree crops are 20,620 ha for oil palm, 3,000 ha for coconut and 450 ha for cocoa. The top five

miscellaneous crops and those growing areas are sugarcane of 9,230 ha, rambutan of 2,520 ha, durian of 2,430 ha, jackfruit of 1,379 ha and banana of 1,190 ha. Other 97 crops grown in the State cover about 5,200 ha. Major crop production in 1987 was paddy of 748,100 tons including output from MADA, oil palm of 236,000 tons as FFB, rubber of 192,200 tons and dry cocoa beans of 250 tons.

The FAMA's projection on the total demand for food crops, vegetables, fruits and freshwater fishes is summarized below.

Produce	Net Consumption (ton)	Outflow to Other States (ton)	Post-harvest Loss (ton)	Total Demand (ton)
Food crops	6,592	167	1,690	8,449
Vegetables	69,150	915	17,516	87,581
(Leafy)	(26,543)	(226)	(6,692)	(33,461)
(Fruit)	(31,008)	(587)	(7,899)	(39,494)
(Root)	(8,599)	(69)	(2,167)	(10,835)
(Other)	(3,000)	(33)	(758)	(3,791)
Fruits	60,098	2,663	15,690	78,451
Freshwater fishes	1,073	0	268	1,341

Consumers in Kedah are projected to be provided with local produce comprising food crops of 1,448 tons, vegetables of 4,185 tons, fruits of 10,651 tons and freshwater fishes of 24 tons. Taking into account these local supply, the market potential is projected as shown below with major crops.

Produce	Market Potential (ton)	Major Crops (ton)
Food crops	7,001	Sweet potato (3,873), Taro (1,679)
Vegetables	83,396	
(Leafy)	(32,664)	Mustard (8,859), Cabbage (8,713)
(Fruit)	(36,106)	Cucumber (5,596), Chilli (5,336)
(Root)	(10,835)	Shallot (8,927)
(Other)	(3,791)	Garlic (2,416)
Fruits	67,800	Banana (12,172), Citrus (8,142)
Freshwater fishes	1,317	River catfish (440)

2.3 Present Situation of Non-granary Irrigation Schemes

In the State, about 464,700 ha of land are used for agricultural purposes occupying 49% of the State's territory. Kedah, the largest area of paddy cultivation in the country, has paddy fields of 124,588 ha including MADA area and accounting for 27% of the total farm land in the State. In harmony with natural circumstance of Kedah, rubber planting is also predominant covering 59,710 ha while planted areas of other major tree crops are 20,620 ha for oil palm, 3,000 ha for coconut and 450 ha for cocoa. The top five miscellaneous crops with planted areas are sugarcane of 9,230 ha, rambutan of 2,520 ha, durian of 2,430 ha, jackfruit of 1,379 ha and banana of 1,190 ha. Other 97 crops grown in the State cover about 5,200 ha. The total irrigable paddy fields are 92,633 ha including the Muda granary area of 75,500 ha and non-granary irrigated areas of 17,133 ha.

- Number of schemes : 75
- Total irrigable area : - main season = 17,133 ha
  - off season = 13,510 ha
- Type of schemes : gravity; 39 pump; 26
  gravity/pump; 9
  controlled drainage; 1
- Irrigation water resources availability by scheme (except controlled drainage scheme)
  : - sufficient for double cropping; 46
  - insufficient for off season presaturation; 21
  - limited to only single cropping; 7
- Average cropping intensity (paddy + upland crops) for previous three years
  : - main season = 73%
  - off season = 53%
- Average cropping intensity (paddy only) for previous three years
  : - main season = 70%
  - off season = 50%

- Utilization of scheme :
  - main season paddy cropping intensity of 100%; 21
  - main season paddy cropping intensity of more than 50%; 44
  - main season paddy cropping intensity of less than 50%; 3
  - fully idle; 5
  - fully converted; 2

Irrigation facilities were newly constructed and graded up by implementing the Lembah Kedah IADP and the National Small Scale Irrigation Project both aiming to correct infrastructure disparities between the MADA area and its outside areas. As a result, the main season paddy cropping intensity is over 90% in non-granary irrigation schemes where diverted discharge is rich and irrigation facilities are well maintained. In some schemes, there still remains water shortage problem in the off season. To such schemes, irrigation water is supplemented from the MADA system for the off season. Paddy farming in Kedah is thus stabilized to large extent.

In water shortage areas, oil palm planting under mini-estates has been encouraged by FELCRA, but its implementation shows very slow progress due to farmers' adherence to their paddy cultivation. On the other hand, farmers in Kubang Pasu area, northern part of the State, strongly intend to diversify crops especially by growing tobacco. But they are facing with limitation caused by the existing quota system.

In Kedah, the smallness in land holding size is predominant as a result of the traditional custom of inheritance, and it is a bottleneck in extending farm size. Some farmers with strong intention towards paddy cultivation have obtained tenancy of paddy fields in other States and migrated there for undertaking paddy cultivation. Recently, serious water use conflict with non-agricultural sectors in the middle to downstream reaches of the Muda river causes four non-granary irrigation schemes of 4,195 ha in total diverting river discharge reduce the off season paddy cropping intensity.

3. EVALUATION OF CROP DIVERSIFICATION POTENTIAL FOR NON-GRANARY IRRIGATION SCHEMES

This section presents a general concept, criteria and procedure of evaluation in order to facilitate understanding of the results of the evaluation of potential for crop diversification by scheme attached in Appendix of this volume. A detailed explanation of the evaluation is given in Volume 2.

3.1 *Basic Considerations for Evaluation*

The intended shift from paddy cultivation to diversified crops in non-granary irrigated areas would invariably require investigations on a range of issues such as the selection of the appropriate crops based on agronomic and economic factors, institutional support systems, and additional investments for providing new or upgrading of facilities. Since the areas concerned are both extensive and widespread, it is only proper that a coordinated study be carried out in order to evaluate the prevailing scheme conditions and to prepare crop diversification strategies including the selection of the suitable crops.

To prepare crop diversification options for revitalization of the non-granary irrigation schemes with a wide range of constraints, the potential for crop diversification in each scheme area has to be evaluated and then indicated as the crop diversification patterns. Such procedure is to be defined as evaluation of resource potential for crop diversification. Its outcome will provide indications of the crop diversification patterns being a basis for formulating development plans and programs.

For non-paddy crops, irrigation has recently become an important input for crop production in Malaysia like irrigation for paddy. In order to a accommodate crop diversification in the existing rice-based irrigation systems, special considerations are required for

the differences between paddy and non-paddy crops as well as paddy farmers behavior in addition to basic parameters such as soil-plant-water relations, water resources, climate, geographic, economic and social.

3.1.1 Differences between paddy and non-paddy crop

Paddy is very tolerant to fully saturated or flooded conditions, which is the main reason for it being planted in flood prone areas with heavy soils and poor drainage conditions. Non-paddy crops on the other hand need non-saturated and well aerated soils for healthy growth. Therefore poorly drained areas as found in most of the schemes can seriously affect growth and yields of non-paddy crops.

Sensitivity to water stress varies between their growth stages and also crop types. Cultural practices and production systems can be vastly different between types and varieties and the produce also tend to be more perishable than paddy.

These basic differences need some general criteria for the system design to be established. Irrigation for paddy is designed for continuous supply and drainage adequate for excess surface flow. Whereas for non-paddy, supply is intermittent since demand depends on available soil water storage and evapotranspiration rate. Besides irrigation, water is also required for fertilizer and pesticide application for non-paddy crops. Its drainage design will need to consider both surface and subsurface flows.

3.1.2 Paddy farmers' behavior

Paddy areas have a very long history of mono-cropping, and traditions and culture have evolved around paddy. Most paddy farmers are usually experienced and knowledgeable only in paddy production. Thus, diversification will require changes to deep-rooted life styles, values and technology of paddy farmers. On the other hand,

diversification will also require appropriate adjustments on its part to match with their behavior.

In this connection, a Socio-economic Sample Survey was performed in all non-granary irrigation scheme areas to identify paddy farmers' intentions and local community opinion leaders' view towards crop diversification. The results of the Socio-economic Sample Survey are presented in Appendix B for farmers' intentions and Appendix C for the leaders' opinions.

3.1.3 Determination of categories

In deciding options for crop diversification, it is apparent that there exists various possibilities for diversifying land utilization such as double cropping of paddy, combination of the main season paddy with short-term crops in the off-season, mix-farming, perennial tree crop cultivation, freshwater aquaculture, and cattle grazing ground. Any one of these taken singly on in combination with any other option can be a category. Taking into consideration the purpose of the evaluation under the Study, the following eight categories are to be made:

Category 1 : Schemes to be converted to high value crop cultivation under irrigated condition,

Category 2 : Schemes to be converted to tree crop cultivation;

Category 3 : Schemes to introduce two-cropping system planting paddy during the main season and short-term annual crops during the off-season;

Category 4 : Schemes to be converted to animal feeding crop cultivation or cattle raising fields;

Category 5 : Schemes to be converted to freshwater fish culture ponds;

Category 6 : Schemes to be positively maintained as mini-granary areas;

Category 7 : Schemes to be maintained as paddy cultivation areas within a definite period of time for social welfare purposes and thereafter to be further categorized; and

Category 8 : Schemes to be converted to housing/industrial and other uses.

3.2 Criteria for Evaluation

3.2.1 General

Inevitably, crop diversification involves the question of which crop or crops to be recommended based on a variety of factors. In the process to evaluate potential for crop diversification, each non-granary irrigation scheme is subjected to a screening process on a variety of factors. For this purpose, seven main factors are taken into account.

- Water resources availability,
- Farmers' intention towards continuation of paddy cultivation and introduction of crop diversification,
- Land suitability for carrying out direct seeding and mechanized plowing and harvesting for growing paddy,
- Soil and climatic suitability and limitations for the cultivation of specific crops,
- Crop profitability,
- Crop marketability, and
- Investment performance with regard to crop diversification.

3.2.2 Water resources availability

The evaluation of water resources in quantitative and qualitative terms is based on the information collected during the Scheme Inventory Survey. Reconfirmation of water resources availability is carried out through supplementary investigations on rainfall data, catchment characteristics, river discharges, reference on the existing hydrological procedures, and previous study reports on the availability of water resources on a specific catchment. The criteria for evaluating water availability of each non-granary irrigation scheme is expressed in the following four terms:

A. Irrigation water is sufficient for double cropping of paddy;

B. Sufficient for supplying irrigation water to the main season paddy cultivation but insufficient for meeting presaturation water requirement for the off season paddy cultivation;

C. Limited to single cropping of the main season paddy and upland crop cultivation; and

D. Insufficient for paddy cultivation but no limitation to grow upland crops for the main season.

The detailed information on water resources evaluation for the various non-irrigation schemes is compiled in Appendix A of Volume 2.

3.2.3 Farmers' intention towards continuation of paddy cultivation and introduction of crop diversification

This factor is important as the success of the crop diversification program is depended on farmers' willingness to participate and also their attitude and preference to move towards a more diversified cropping pattern. To evaluate this factor, the Socio-economic Sample Survey results are referred to in respect to paddy farmers' intention towards continuation of paddy cultivation and introduction of crop diversification.

The evaluation criteria established are based on the proportion of respondent farmers who strongly intend to continue the present paddy cultivation pattern among the total sample farmers and that of paddy planted area for the last three years (1985-1987) against the irrigable area of each scheme. The evaluation method is to identify the State in which more than half of the respondent farmers show intentions towards continuation of paddy cultivation and to screen out the scheme with paddy cropping intensity of more than 50%.

- Schemes possible for promoting double cropping of paddy in case that the proportion of intended farmers against the total samples in each State is over 50%. Also, possible for promoting double cropping of paddy if the scheme-by-scheme planted area for the last three years is more than 50% every year in case of the State with the above proportion of less than 50%.

- Schemes impossible for promoting intensive paddy cultivation when the above proportion on the State basis is less than 50% and the cropping intensity is below 50%.

3.2.4 Land suitability for mechanized farming practices

This factor is optionally evaluated to clarify suitability of undertaking modern farming practices of paddy cultivation in case of schemes where intensive double cropping of paddy can be promoted. To evaluate this factor, special attention is paid to soil physical characteristics, size of scheme, availability of mechanical service centers and distance between schemes and available service sources. The evaluation criteria is established taking into account soil physical characteristics among others as below.

- Schemes suitable for mechanized farming practices are expressed in terms of the existence of alluvial soils.
- Schemes not suitable for mechanized farming practices are indicated by inappropriate soil physical conditions derived from peat soils and organic mac soils which are featured by low bearing capacity for using tractors and harvesters commonly used in Malaysia.

The detailed information is presented in Appendix D of Volume 2.

3.2.5 Soil and agro-climatic suitability and limitations for the cultivation of specific diversified crop

These factors are the basis to identify crops suitable for each scheme from the agronomic viewpoints. In identifying suitable crops, soil criteria for optimum crop growth is prepared for the following 28 crop groups referring to documents such as "Soil-Crop Suitability Classification for Peninsular Malaysia" prepared by the Department of Agriculture (DOA), "The Land Capability Classification" collected from DOA, Sabah and "Sarawak Land Capability Classification and Evaluation for Agricultural Crops" issued by DOA, Sarawak.

Short-term food crops:

maize, sorghum, wet paddy and upland rice as food crops, and ginger, groundnut and vegetables as vegetable crops,

Fruits:

mango/durian, guava, banana, cashewnut, papaya, citrus, pineapple and watermelon,

Perennial industrial crops:

coconut, oil palm, cocoa, rubber, sago palm, coffee, tea, clove, tobacco, sugarcane and pepper,

Feeding crops:

fodder grasses and pasture.

As the basic information to evaluate soil suitability and limitations, soil services that distribute in each scheme are identified referring to the available reconnaissance soil maps and those limitations to growth of each of 28 crops are evaluated on the basis of the soil criteria. The evaluated limitations are expressed in the farm of soil suitability classed with a symbol indicating the specific limitation such as acid sulphate layer, depth to compacted layer, drainage, nutrient imbalance, organic horizon, salinity, and texture and structure. The followings are the grade of limitations to crop growth.

Class 1 soils with no limitation or only minor limitations to crop growth are suitable for the widest range of crops.

Class 2 soils with moderate limitations to crops growth are suitable for a narrower range of crops than Class 1 soils. Minor management practices according to limitations are required.

Class 3 soils with one serious limitation to crop growth are restricted to an even narrower range of crops. Necessary management practices involve moderate expenses.

Class 4 soils with more than one serious limitation to crop growth are suitable for a very narrow range of crops with provision of major amelioration measures.

Class 5 soils with at least one very serious limitation to crop growth are least suitable for crop growth.

Through the identification and grading of limitations to crop growth for soil series which is identified in each non-granary irrigation scheme, soil suitability of 28 crops is classified into four groups such as suitable, marginally suitable, very marginally suitable and not suitable for promoting crop diversification.

The correlation between suitability grades and soil classes as follows:

Suitable:
Class 1 soils,

Marginally suitable:
Class 2 soils and partly Class soils of which limitations can be physically improved,

Very marginally suitable:
Class 3 soils with limitations of which limitations can be hardly graded up by direct physical measurements, and

Not suitable:
Classes 4 and 5 soils.

After evaluating soil suitability in the above procedure, identified crops with suitable to very marginally suitable grades are to be succeedingly confirmed from the agro-climatic viewpoint. For this purpose, two basic references are utilized, being "Agro-ecological regions in Peninsular Malaysia" and "Climatic and Agricultural Planning in Peninsular Malaysia" both prepared by the Malaysian Agricultural Research and Development Institute (MARDI). Among the identified crops, those which are not suited to regional climatic conditions in the specific scheme are eliminated from a list of suitable crops identified on the basis of soil conditions.

The detailed information is presented in Appendix D of Volume 2.

3.2.6 Crop profitability

To confirm the net income difference between paddy cultivation and other diversified crops, crop budget is computed based on average crop yield under normal farming practices, production cost and selling price. For this, "Guideline on Economic Viability of Selected Crops" prepared by the Ministry of Agriculture (MOA) is used as the basic reference. This includes crop budget data on 25 food crops and vegetables, 14 fruits and one industrial crop. With regard to other industrial crops, data on crop budgets are supplemented from MOA, DOA and agencies concerned. All the information is presented in Appendix E of Volume 2. The evaluation criteria is set up as below.

- Crop suitable for promoting diversified cropping are more profitable as compared with net income derived from the single cropping of paddy.
- Crops not suitable for incorporating in diversified cropping are less profitable in comparison with the net income obtained from the single cropping of paddy.

3.2.7 Crop marketability

This factor is also very important when crop diversification is promoted is specific areas, because most paddy farmers are aware that success of diversified cropping especially for short-term upland crops demand largely on availability of markets where they can expect to sell their produce at profitable price levels.

In terms of export-oriented perennial crops, the respective responsible agencies provide smallholder farmers with easy access to the existing marketing channel actively maintained. As for short-term upland crops, the Federal Agricultural Marketing Authority (FAMA) is responsible for promotion of marketing activities to encourage growers. Every year, FAMA gives a guideline for market potential in each State for about 30 varieties of vegetables and cash crops, 20 varieties of fruits and 15 kinds of freshwater fishes and livestock products. The data on market potential is compiled in Annex F of

Volume 2. By referring to this guideline, the crop marketability is evaluated in terms of quantified market potential on the administrative district-by-district bases. The evaluation criteria is set up as below.

- Crops suitable for promoting crop diversification have less marketable volume as compared with the demand of a specific administrative district where one particular scheme is located major market situated nearby or easily accessed from the scheme.

- Crops not suitable for promoting crop diversification have marketable quantity exceeding over more than twice of the demand in the specific administration district.

3.2.8 Investment performance with regard to crop diversification

This factor is evaluated for the purpose of judging the priority among categories and crops of which suitability to promote crop diversification are both identified. The evaluation procedure is based on economic viability indicated by net present value and benefit-cost ratio.

3.3 Procedure of Evaluation

3.3.1 General procedure

The potential of crop diversification for each non-granary irrigation scheme is evaluated category by category based on the following seven stepwise procedure as illustrated in Fig. 1.

Step 1 : Evaluation water resources availability,

Step 2 : Evaluation of farmers' intention towards continuation of paddy cultivation and introduction of crop diversification,

Step 3 : Evaluation of land suitability for carrying out direct seeding and mechanized plowing and harvesting in growing paddy,

Step 4 : Evaluation of soil and climatic suitability and limitations for the cultivation of specific crops,

Step 5 : Evaluation of crop profitability,

Step 6 : Evaluation of crop marketability, and

Step 7 : Evaluation of investment performance with regard to crop diversification.

The flow chart of evaluation procedure is illustrated in Fig. 2. In general, evaluation of factors in each Category starts from Step 1 and ends Step 7 for the respective schemes. As Step 3 is the optional gate to evaluate land suitability for conducting mechanized paddy cultivation practices, all Categories other than Category 6 jumps evaluation in Step 3. Before entering Step 1, the following two items are preliminarily checked to understand the present condition on how a scheme is utilized by beneficially farmers:

- Type of irrigation water intake facilities, and
- Planted area for the last three years.

3.3.2 Evaluation procedure for Category 1

In Step 1, one scheme has potential for promoting intensive short-term upland crop cultivation under irrigated condition if available water resources are enough for double cropping of paddy and short during the presaturation period of the off season. Upland crops can be grown maximum twice a year under irrigated condition in case that available water resources can meet irrigation water demand only for the main season paddy. Irrigated cropping of upland crops are limited to the main season if available water resources are insufficient for paddy cultivation. Therefore, each scheme can pass Step 1 with the exceptions of control drainage and inundation schemes.

In Step 2, schemes are evaluated as possible for promoting crop diversification and then go to Step 4. To provide information on technical and economical choice of upland crops if requested, other schemes also move down to Step 4 additionally.

In Step 4 after skipping Step 3, suitable upland crops are firstly identified through soil-crop-suitability assessment. Further, suitable varieties of upland crops are selected among the above crops identified paying special attention agro-climatic condition in lowland areas. If there is an identified and selected crop, schemes enter into the next step.

In Step 5, net income data of the selected crops are compared with that earned from single cropping of paddy. In case of higher net income expected, schemes shift to the next step.

In Step 6, marketability of upland crops confirmed its profitability are evaluated through comparison with the local demand in the District where schemes are located and in the local marketing centers. Usually, mono-cropping of the specific upland crop is very risky from the viewpoints of crop management and marketing. In this connection, crop production is estimated based on such assumed figures as the national average yield and the maximum planted area equivalent to 50% of the scheme's irrigable area for each of profitable crops.

In Step 7, economic viability is evaluated in terms of benefit-cost ratio and net present value. For this, benefit and cost are estimated on the basis of the assumption as below. The result is used for determining the priority among marketable upland crops and in comparison with other categories.

- Cost and benefit are estimated on the unit area basis,
- Cost required for upgrading drainage and access conditions is assumed to be M$8,000/ha and time required for constructing these on-farm service facilities is one year, and
- Benefit born before diversification depends on single cropping of paddy and after diversification comes from marketable upland crops in the same planted area of paddy. Crop budget figures refer to those used in evaluating crop profitability. Buildup period to reach the target yields of upland crops is also assumed to be five years.

3.3.3 Evaluation procedure for Category 2

In Step 1, consideration is given only to improve drainage and farm access conditions for evaluating potential for converting paddy fields to perennial crop fields. Thus, all the schemes except control drainage and inundation types go to the next step.

In Step 2, the same procedure taken for Category 1 is applied and therefore schemes jump Step 3 and enter to Step 4.

In Step 4, suitability of fruit and industrial tree crops is assessed from the viewpoint of soil-crop suitability relationship. Then, identified tree crops as suitable are evaluated on the basis of agro-climatic condition of each scheme. When a tree crop is identified and selected, schemes shift to the next step.

In Step 5, annualized net income is calculated according to the economic life of a tree crop and then compared with net income gained from single cropping of paddy. If the annualized income is higher, schemes enter into the next step.

In Step 6, profitable tree crops are evaluated to confirm those marketability as compared with local demand on the administrative district basis firstly and in major markets secondly. Crop production amount is equal to the annualized yield used for estimate of crop profitability.

In Step 7, the same procedure as taken for Category 1 is applied. Cost required for upgrading drainage and farm access conditions is assumed to be M$4,000/ha for scheme of which soils have marginally drainage limitation to crop growth and M$8,000/ha for the case of very marginally drainage limitation.

3.3.4 Evaluation procedure for Category 3

In Step 1, schemes with sufficient water resources for the main season paddy cultivation are identified as possible schemes where two cropping system can be promoted. While, schemes with water shortage problems during the main season are deleted from further evaluation in Step 2 and onward.

In Step 2, schemes that are evaluated as possible for promoting crop diversification and intensive double cropping of paddy go to Step 4. In case of schemes with no possibility of improving the present paddy cultivation pattern, further evaluation in Step 4 and onward is made to get information on suitable crops with those profitability and marketability as reference data.

In Step 4 after skipping Step 3, short-term upland crops suitable for the off season cultivation are identified resulting from assessment of soil-crop-suitability. Then, crop selection is made after confirming crop adaptability to agro-ecological situation in each scheme. If there is identified and selected crop, schemes move to the next step.

In Step 5, net income of the main season paddy is estimated taking into account increase in average unit yield from 2.25 ton/ha to 3.5 ton/ha through improvement of farming practices. The off season upland crops have the same yield level of Category 1.

In Step 6, evaluation of marketability is made for the off season upland crops by applying the similar method to Category 1.

In Step 7, additional investment requirement is assumed to be M$4,000/ha. Benefit estimate and economic viability confirmation are made following the same procedure employed for Category 7.

3.3.5 Evaluation procedure for Category 4

In Step 1, no attention is paid to availability of water resources so that all the schemes can pass this step.

In Steps 2 and 3, no evaluation of these two factors is made as possibility of introducing this Category is examined from the technical and economical viewpoints.

In Step 4, soils with excessively drained feature are evaluated as possible for converting paddy fields to animal grazing land. In case of growing animal feeding crops, those suitability is assessed from the soil-crop-suitability assessment. When both results indicate as suitable for conversion of paddy fields for the livestock purpose, schemes go to the next step.

In Step 5, profitability is evaluated focussing upon the contribution of both grazing and feeding practices to livestock outputs. For this purpose, the average annual income is estimated based on beef production value obtained from unit yield of animal feeding crops. If the profit is higher than that derived from single cropping of paddy, schemes enter into the next step.

In Step 6 and , marketability is evaluated with the same procedure of Category 1.

In Step 7, additional investment cost is assumed to be M$500/ha for the use of paddy fields to rear animals and M$4,000/ha for growing animal feeding crops. Benefit is estimated referring to the result of profit evaluation.

3.3.6 Evaluation procedure for Category 5

In Step 1, special attention is paid to availability of sufficient water resources to meet daily freshwater requirement. If the available water resources are enough to grow paddy twice a year, schemes enter into the next step. For the case of control drainage schemes located along the coast in Sarawak, intake of brackish water is evaluated according to topographic condition.

In Steps 2 and 3, all the schemes with sufficient water resources skip these two steps with the same reason of Category 4.

In Step 4, soils with heavy texture are prerequisite to convert paddy fields to fish ponds. From the agro-climatic viewpoints, schemes with no effect of flooding are recognized as possible for promoting freshwater fish pond culture. Schemes that can pass these two checking points move to the next step. In case of brackish water fish culture, flooding or excess inundation problem is only assessed.

In Step 5, profitability is evaluated on the basis of annualized net income earned from carp, freshwater shrimp and brackish water prawn cultures by in excavated fish pond with modern practices. If higher profit is expected as compared with single cropping of paddy, schemes shift to the next step.

In Step 6, the evaluation procedure of marketability is the same as Category 1.

In Step 7, required cost for excavating fish pond is assumed to be M$10,000/ha. Benefit is estimated by referring to the profitability evaluation results.

3.3.7 Evaluation procedure for Category 6

In Step 1, supply of irrigation water for the off season is the most important key factor for this category. Schemes pass this step if available water resources can meet the normal irrigation water demand for the off season paddy.

In Step 2, schemes evaluated as possible for promoting double cropping of paddy enter into the next step.

In Step 3, land suitability for performing mechanized farming practices is evaluated. Schemes identified as suitable pass this step and go to the next step.

In Step 4, soil and agro-climatic suitabilities are reconfirmed and schemes with no limitation shift to the next step.

In Step 5, assumption is made in terms of increase in unit yield of paddy from 2.25 ton/ha to 3.5 ton/ha per one season. Schemes pass this step.

In Step 7 after skipping Step 6, cost is assumed to be M$4,000/ha to improve on farm-service facilities matching with undertaking of mechanized farming practices. Benefit estimate is made referring the results of profitability evaluation.

3.3.8 Evaluation procedure for Category 7

Evaluation of potential for the Category 7 is to be made in case that a scheme is presently used for the paddy cultivation purpose and no potential use for the Categories 1 to 6 is identified.

In Step 1, schemes with available water resources for the main season paddy cultivation goes to the next step.

In Step 2, schemes shift the next step if identified as impossible for promoting crop diversification from the social viewpoint.

In Step 4 after skipping Step 3, soil limitations to growth of paddy are reconfirmed. If schemes have poorly drained soils caused by frequent flooding and stagnant water problems, these are deleted from further evaluation. In this connection, inundation and controlled drainage schemes can be taken into consideration only for the case that more than half of the irrigable area is grown with paddy for the last three years. All the schemes that pass this step are identified as Category 7 without further evaluation of factors in Step 5 and onward.

3.3.9 Evaluation procedure for Category 8

If no crop diversification potential is found through evaluation for the Categories 1 to 7, the following factors are to be evaluated. These are water availability and soil limitation to crop growth. Schemes with no available water resources and unsuitable soils for crop growth are defined as Category 8.

4. RESULTS OF EVALUATION

The evaluation results of crop diversification potential are adjusted to agro-climatic factors, regional market demand for diversified crops and investment performance. The State of Kedah is divided into four agro-ecological zones, Regions 1 to 4. As described in Appendix D of Volume 2, each Region has different advantages in growing perennial lowland crops. Taking into consideration this regional climatic suitability, recommendable crops are selected as shown in Table 1 and some of crops judged as suitable in each step of the potential evaluation are deleted.

Regarding the Category 6, adjustment is made on the basis of such conditions as scheme size of more than 100 ha and main season paddy planted area covering more than the half of irrigable area in each scheme.

If marketable quantities of specific crops produced in one non-granary irrigated area is over the demand within an administrative district, possibility of marketing to large consumption centers, Penang and Kuala Lumpur, is examined by comparing surplus of marketable quantities with the regional market demand.

As a result of above process, the crop diversification potential is adjusted to the present situation category by category for each scheme. Table 2 shows the summary of crop diversification potential evaluation. The process of evaluation is attached to this Volume 5 as Appendix in a form of scheme-by-scheme description sheet.

Among 75 non-granary irrigation schemes as shown in Table 2, four schemes have the highest potential for the Category 1 and another 21 schemes for the Category 2. There are 11 schemes to which the first priority is put for the Category 6 with potential for crop diversification under the Categories 1 to 3. In addition, nine schemes are classified as the Category 3 and 30 schemes as the Category 7 both having the first priority.

Tables & Figures

Table 1 Priority Order of Selected Crops for Each Scheme

State : Kedah (1/3)

Code No.	Scheme	Annual Crops	Perennial Crops
KH001	Bandar Baharu	DP, VG*, GG*	CN, SC, DM*, PL*
KH002	Serdang Bt. 16	SP	DM, RB
KH003	Kilang Bt/Kg. Ulu	SP	DM, RB, FC
KH004	Serdang Batu 18		DM, RB, FC
KH005	Sg. Tengas	SP	DM, RB, FC
KH006	Sg. Taka	SP	RB, DM*
KH007	Kg. Berjaya	SP, VG*, GG*	CN, SC, PL*, CR*
KH008	Sidam Kanan	SP	DM*
KH009	Sg. Seluang		OP
KH010	Ulu Mahang	SP	RB, DM*
KH011	Bendang Sena	SP	RB, DM*, FC
KH012	Jemerli		OP
KH013	Otak Kerbau	VG, GG*	CN, SC, PL*, CR*
KH014	Kulim	SP	RB, DM*
KH015	Terat Batu	SP	RB, DM*
KH016	Selarung Panjang	VG, GG*	CN, SC, PL*, CR*, FC
KH017	Merbau Pulas	SP	RB, DM*
KH018	Padang Meha/Pagar Museh	SP	RB, DM*
KH019	Kg. Lobak	VG	CN, SC, PL*, CR*
KH020	Titi Karangan	SP	RB, DM*
KH021	Pulai	DP, VG, GG*	CN, SC, DM*, PL*, CR*
KH022	Kg. Iboi	SP	RB, DM*
KH023	Kg. Tawar	SP	DM, RB, FC
KH024	Simpang Empat	SP	DM, RB, FC
KH025	Ulu Bakai	VG, GG*	DM, CN, SC, CR, PL*

Remarks: Priority order is shown from left to right for each crop group.

*; Needs for regional marketing promotion
DP; Double cropping of paddy
SP; Single cropping of paddy
VG; Vegetables
GG; Ginger
DM; Durian/mango
CN; Cashewnut
CR; Citrus
PL; Pineapple
OP; Oil palm
RB; Rubber
TB; Tobacco
SC; Sugarcane

Table 1 Priority Order of Selected Crops for Each Scheme

State : Kedah (2/3)

Code No.	Scheme	Annual Crops	Perennial Crops
KH026	Kg. Badang	SP, VG	
KH027	Kg. Luar	SP	RB, DM*
KH028	Ulu Sedim/Si Puteh	SP	DM, RB
KH029	Landak	SP	DM, RB
KH030	Kg. Mempelam	SP, VG	DM, CN, SC, CR, PL*
KH031	Sg. Tiak	SP	DM, RB
KH032	Tg. Pari	SP	DM, RB
KH033	Pantai Cicak	SP, VG	
KH034	Sg. Limau/Carok Sikin		DM, RB
KH035	Sidam Kiri	SP	RB, DM*
KH036	Pekula	DP, VG*, GG*	CN, SC, DM*, PL*, CR*
KH037	Sg. Gelam	SP	DM, RB
KH038	Merbok Bunding	SP, VG*	CN, OP, SC, PL*, CR*
KH039	Pinang Tunngal	DP, VG	CN, OP, SC, DM*, PL*, CR*
KH040	Tandop Pekan Merbok	SP	DM, RB
KH041	Kota II	DP, VG*, GG*	CN, SC, DM*, PL*, CR*
KH042	Pantai Prai/Serukam	SP	RB, DM*
KH043	Kemumbong	SP	DM, RB
KH044	Lubok Kiab		DM, RB
KH045	Kg. Parit	DP, VG*	
KH046	Tg. Sik	SP, VG*	
KH047	Tg. Besar	DP, VG*	
KH048	Sg. Teloi	SP, VG	
KH049	Padang Cicak	SP, VG	
KH050	Sg. Cepir		RB, DM*

Remarks: Priority order is shown from left to right for each crop group.

*; Needs for regional marketing promotion
DP; Double cropping of paddy
SP; Single cropping of paddy
VG; Vegetables
GG; Ginger
DM; Durian/mango
CN; Cashewnut
CR; Citrus
PL; Pineapple
OP; Oil palm
RB; Rubber
TB; Tobacco
SC; Sugarcane

Table 1 Priority Order of Selected Crops for Each Scheme

State : Kedah (3/3)

Code No.	Scheme	Annual Crops	Perennial Crops
KH051	Gua Ginu	SP, VG, GG*	DM, PL, CN, CR, SC, TB, RB
KH052	Nawa Gajah Mati	VG, GG*	DM, CN, CR, SC, TB, RB, PL*
KH053	Binjal		RB, DM*
KH054	Lembah Bata Phase I		RB, DM*
KH055	Sg. Pering	DP, VG*, GG*	CN, SC, TB, RB, DM*, PL*, CR*
KH056	Che Kedo/Putat	DP, VG*, GG*	CN, SC, TB, RB, DM*, PL*, CR*
KH057	Sg. Gelong	SP	RB, DM*
KH058	Lembah Bata II	SP	RB, DM*
KH059	Janing	SP	RB, DM*
KH060	Carok Kejal	SP, VG*	
KH061	Kurong Hitam	SP	RB, DM*
KH062	Pdg. Pusing	VG*	CN, SC, TB, RB, DM*
KH063	Paya Rawa I	DP, VG, GG*	CN, SC, TB, RB, DM*, PL*, CR*
KH064	Pdg. Kerbau I & II	SP	RB, DM*
KH065	Sg. Lampam/Rambai	SP	RB, DM*
KH066	Kg. Ruat	SP, VG, GG*	DM, CN, SC, PL*, CR*
KH067	Sinkir, Sg. Pial	SP, VG*	CN, OP, SC, DM*, PL*, CR*
KH068	Bakar Bata	SP, VG, GG*	DM, CN, SC, PL*, CR*, FC
KH069	Bakong/Lubok Boi	DP, VG*, GG*	CN, SC, DM*, PL*, CR*
KH070	Pdg. Gaung	SP	RB, DM*
KH071	Bukit Kemboja	SP	RB, DM*
KH072	Pdg. Matsirat,Limbong,Raggut	SP	RB, DM*
KH073	Terusan Seimbang Sg.Tok Peteri	SP	RB, DM*
KH074	Kg. Kok	SP	RB, DM*, FC
KH075	Pdg. Kerbau III	SP	RB, DM*

Remarks: Priority order is shown from left to right for each crop group.

*; Needs for regional marketing promotion
DP; Double cropping of paddy
SP; Single cropping of paddy
VG; Vegetables
GG; Ginger
DM; Durian/mango
CN; Cashewnut
CR; Citrus
PL; Pineapple
OP; Oil palm
RB; Rubber
TB; Tobacco
SC; Sugarcane

Table 2 Crop Diversification Potential for Each Scheme

State : Kedah (1/2)

Code	Scheme	Category 1	2	3	4	5	6	7	8
KH001	Bandar Baharu	*4	*2	*4	.	.	*1	.	.
KH002	Serdang Bt. 16	.	*1	.	.	.	.	*2	.
KH003	Kilang Bt/Kg. Ulu	.	*2	.	.	*3	.	*1	.
KH004	Serdang Batu 18	.	*1	.	.	*2	.	.	.
KH005	Sg. Tengas	.	*1	.	.	*3	.	*2	.
KH006	Sg. Taka	.	*2	.	.	.	.	*1	.
KH007	Kg. Berjaya	*4	*1	.	.	.	.	.	.
KH008	Sidam Kanan	.	*4	.	.	.	.	*1	.
KH009	Sg. Seluang	.	*1	.	.	.	.	.	.
KH010	Ulu Mahang	.	*2	.	.	.	.	*1	.
KH011	Bendang Sena	.	*2	.	.	*3	.	*1	.
KH012	Jemerli	.	*1	.	.	.	.	.	.
KH013	Otak Kerbau	*1	*2	.	.	.	.	.	.
KH014	Kulim	.	*2	.	.	.	.	*1	.
KH015	Terat Batu	.	*2	.	.	.	.	*1	.
KH016	Selarung Panjang	*1	*2	.	.	.	.	.	.
KH017	Merbau Pulas	.	*2	.	.	.	.	*1	.
KH018	Padang Meha/Pagar Museh	.	*2	.	.	.	.	*1	.
KH019	Kg. Lobak	*2	*3	*1	.	.	.	*3	.
KH020	Titi Karangan	.	*2	.	.	.	.	*1	.
KH021	Pulai	*2	*3	*2	.	.	*1	.	.
KH022	Kg. Iboi	.	*2	.	.	.	.	*1	.
KH023	Kg. Tawar	.	*1	.	.	*3	.	*2	.
KH024	Simpang Empat	.	*1	.	.	*3	.	*2	.
KH025	Ulu Bakai	*1	*2	.	.	.	.	.	.
KH026	Kg. Badang	*2		*1	.	.		*3	.
KH027	Kg. Luar	.	*2	.	.	.	.	*1	.
KH028	Ulu Sedim/Si Puteh	.	*1	.	.		.	*2	.
KH029	Landak		*1	.	.	*3	.	*2	.
KH030	Kg. Mempelam	*2	*3	*1	.	.	.	*3	.
KH031	Sg. Tiak	.	*1	.	.	.	.	*2	.
KH032	Tg. Pari	.	*1	.	.	.	.	*2	.
KH033	Pantai Cicak	*2	.	*1	.	.	.	*3	.
KH034	Sg. Limau/Carok Sikin	.	*1	.	.	.	.	.	.
KH035	Sidam Kiri	.	*2	.	.	.	.	*1	.
KH036	Pekula	*4	*2	*4	.	.	*1	.	.
KH037	Sg. Gelam	.	*1	.	.	.	.	*2	.
KH038	Merbok Bunding	*4	*1	*4	.	.	.	*2	.
KH039	Pinang Tunngal	*2	*3	*2	.	.	*1	.	.
KH040	Tandop Pekan Merbok	.	*1	.	.	.	.	*2	.
KH041	Kota II	*4	*2	*4	.	.	*1	.	.
KH042	Pantai Prai/Serukam	.	*2	.	.	.	.	*1	.
KH043	Kemumbong	.	*1	.	.	.	.	*2	.
KH044	Lubok Kiab	.	*1	.	.	.	.	.	.
KH045	Kg. Parit	*4	.	*4	.	.	*1	.	.

Table 2 Crop Diversification Potential for Each Scheme

State : Kedah (2/2)

Code	Scheme	Category 1	2	3	4	5	6	7	8
KH046	Tg. Sik	*4	.	*4	.	.	.	*1	.
KH047	Tg. Besar	*4	.	*4	.	.	*1	.	.
KH048	Sg. Teloi	*2	.	*1	.	.	.	*3	.
KH049	Padang Cicak	*2	.	*1	.	.	.	*3	.
KH050	Sg. Cepir	.	*1	.	.	.	.	.	.
KH051	Gua Ginu	*2	*3	*1	.	.	.	*3	.
KH052	Nawa Gajah Mati	*1	*2	.	.	.	.	.	.
KH053	Binjal	.	*2	.	.	.	.	*1	.
KH054	Lembah Bata Phase I	.	*2	.	.	.	.	*1	.
KH055	Sg. Pering	*4	*2	*4	.	.	*1	.	.
KH056	Che Kedo/Putat	*4	*2	*4	.	.	*1	.	.
KH057	Sg. Gelong	.	*2	.	.	.	.	*1	.
KH058	Lembah Bata II	.	*2	.	.	.	.	*1	.
KH059	Janing	.	*2	.	.	.	.	*1	.
KH060	Carok Kejal	*4	.	*4	.	.	.	*1	.
KH061	Kurong Hitam	.	*2	.	.	.	.	*1	.
KH062	Pdg. Pusing	*4	*1	*4	.	.	.	.	.
KH063	Paya Rawa I	*2	*3	*2	.	.	*1	.	.
KH064	Pdg. Kerbau I & II	.	*2	.	.	.	.	*1	.
KH065	Sg. Lampam/Rambai	.	*2	.	.	.	.	*1	.
KH066	Kg. Ruat	*2	*3	*1	.	*3	.	*3	.
KH067	Sinkir, Sg. Pial	*4	*1	*4	.	.	.	*2	.
KH068	Bakar Bata	*2	*3	*1	.	*3	.	*3	.
KH069	Bakong/Lubok Boi	*4	*2	*4	.	.	*1	.	.
KH070	Pdg. Gaung	.	*2	.	.	.	.	*1	.
KH071	Bukit Kemboja	.	*2	.	.	.	.	*1	.
KH072	Pdg. Matsirat,Limbong,Raggut	.	*2	.	.	.	.	*1	.
KH073	Terusan Seimbang Sg.Tok Peteri	.	*2	.	.	.	.	*1	.
KH074	Kg. Kok	.	*2	.	.	*3	.	*1	.
KH075	Pdg. Kerbau III	.	*2	.	.	.	.	*1	.

*1	**Super category**	**4**	**21**	**9**	.	.	**11**	**30**	.
*2	2nd priority category	12	37	3	.	1	.	13	.
*3	3rd priority category	.	8	.	.	9	.	9	.
*4	4th priority category with needs of regional marketing promotions	14	1	13	.	.	.	.	.

Fig. 1

Criteria and Procedure of Evaluation for Crop Diversification Potential

FEASIBILITY STUDY ON RATIONALIZATION AND CROP DIVERSIFICATION IN NON-GRANARY IRRIGATED AREAS IN MALAYSIA

Japan International Cooperation Agency

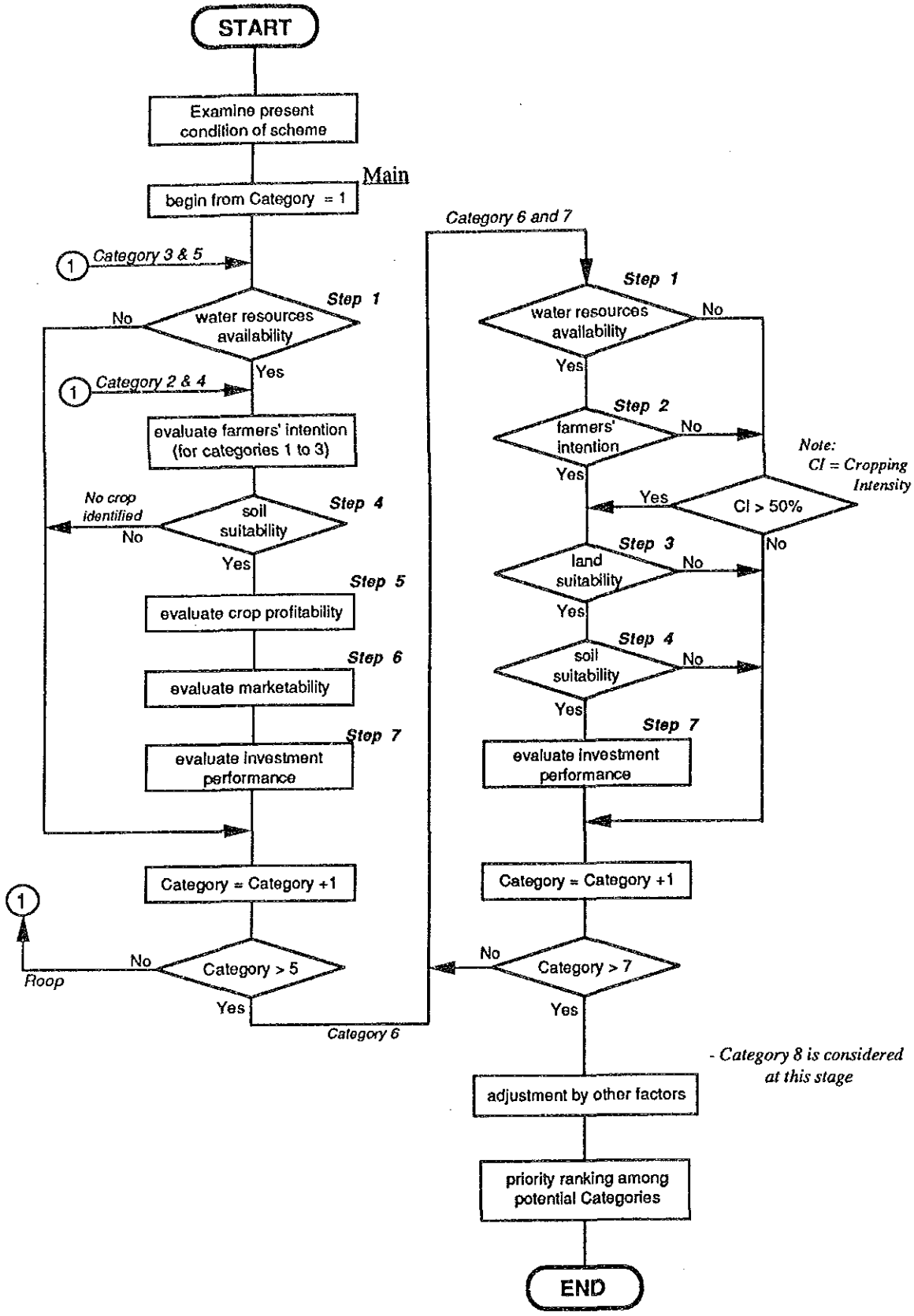

Fig. 2

General Flow of Evaluation for Crop Diversification Potential

FEASIBILITY STUDY ON RATIONALIZATION AND CROP DIVERSIFICATION IN NON-GRANARY IRRIGATED AREAS IN MALAYSIA

Japan International Cooperation Agency

Appendix

Results of Evaluation for Crop Diversification Potential

Remarks

Category

Category 1	*Schemes to be converted to high value crop cultivation under irrigated condition*
Category 2	*Schemes to be converted to tree crop cultivation*
Category 3	*Schemes to introduce two-cropping system planting paddy during the main season and short-term annual crops during the off-season*
Category 4	*Schemes to be converted to animal feeding crop cultivation or cattle raising fields*
Category 5	*Schemes to be converted to freshwater fish culture ponds*
Category 6	*Schemes to be positively maintained as mini-granary areas*
Category 7	*Schemes to be maintained as paddy cultivation areas within a definite period of time for social welfare purposes and thereafter to be further categorized*
Category 8	*Schemes to be converted to housing/industrial and other uses*

Evaluation Item in Each Step

Step 1	*Available irrigation water quantity*
Step 2	*Farmers' intention towards paddy cultivation*
Step 3	*Land suitability for mechanized farming practices*
Step 4	*Soil suitability and limitations to diversify crops*
Step 5	*Crop profitability*
Step 6	*Crop marketability*
Step 7	*Investment performance*

Note:

a. *If any item is examined, steps for the respective categories are indicated with a star mark "*".*
b. *In step 7, B/C ratio at the interest rate of 10% is described.*

Evaluation Results of Each Scheme

CONTENTS

Crop Diversification Potential for KH001

Code Number : KH001 Name of Scheme : Bandar Baharu
State : Kedah District : Bandar Baharu
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 2dt

Irrigable area (ha) Main : 800 Off : 800
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	B	A	-	2.5	12,000
				Groundnut	A	A	A	0.9	2,088
				Vegetable	A	A	-	13.8	14,160
2	*	*	*	Durian/Mango	C	A	-	11.0	5,440
				Guava	C	A	-	3.1	19,200
				Banana	C	A	-	0.7	8,400
				Cashewnut	A	A	A	8.7	1,408
				Papaya	B	A	-	0.6	20,000
				Citrus	B	A	-	2.9	8,400
				Pineapple	A	A	-	9.5	19,200
				Coconut	A	-	A		3,504
				Oilpalm	C	A	A	0.9	15,360
				Cocoa	C	A	A	0.6	2,480
				Rubber	B	A	A	0.6	1,096
				Sago	C	-	A		7,200
				Coffee	A	A	A	0.7	704
				Tea	A	A	A	10.4	1,040
				Clove	B	A	A	1.1	248
				Tabacco	B	A	A	0.7	7,200
				Sugarcane	A	A	A	3.3	16,000
				Pepper	A	A	A	16.4	2,360
3	*	*	*	Maize	A	-	-		2,600
				Sorghum	A	-	A		3,000
				Ginger	B	A	-	2.5	12,000
				Groundnut	A	A	A	0.9	2,088
				Vegetable	A	A	-	13.8	14,160
4	*	*	*	Fodder grasses	A	-	A		
				Pasture	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH002

Code Number : KH002 Name of Scheme : Serdang Bt. 16
State : Kedah District : Bandar Baharu
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2Dt

Irrigable area (ha) Main : 29 Off : 26
Trafficability of farm machinery : Good .
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		435
				Groundnut	C	A	A		76
				Vegetable	C	A	A		513
2	*	*	*	Durian/Mango	C	A	A	11.0	197
				Guava	C	A	-	3.1	696
				Banana	C	A	A	0.7	305
				Cashewnut	C	A	A		51
				Papaya	C	A	-		725
				Citrus	C	A	-		305
				Pineapple	C	A	-	0.5	696
				Coconut	A	-	A		127
				Oilpalm	C	A	A	0.9	557
				Cocoa	C	A	A	0.6	90
				Rubber	A	A	A	1.1	40
				Coffee	C	A	A		26
				Tea	C	A	A		38
				Clove	C	A	A		9
				Tabacco	C	A	A		261
				Sugarcane	C	A	A		580
				Pepper	C	A	A		86
3	*	*	*	Maize	C	-	-		95
				Sorghum	C	-	A		109
				Ginger	C	A	-		435
				Groundnut	C	A	A		76
				Vegetable	C	A	A		513
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	A	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH003

Code Number : KH003 Name of Scheme : Kilang Bt. Kg. Ulu Relau
State : Kedah District : Bandar Baharu
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2Dt

Irrigable area (ha) Main : 40 Off : 40
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		600
				Groundnut	C	A	A		104
				Vegetable	C	A	A		708
2	*	*	*	Durian/Mango	C	A	A	11.0	272
				Guava	C	A	-	3.1	960
				Banana	C	A	-	0.7	420
				Cashewnut	C	A	A		70
				Papaya	C	A	-		1,000
				Citrus	C	A	-		420
				Pineapple	C	A	-	0.5	960
				Coconut	A	-	A		175
				Oilpalm	C	A	A	0.9	768
				Cocoa	C	A	A	0.6	124
				Rubber	A	A	A	1.1	55
				Coffee	C	A	A		35
				Tea	C	A	A		52
				Clove	C	A	A		12
				Tabacco	C	A	A		360
				Sugarcane	C	A	A		800
				Pepper	C	A	A		118
3	*	*	*	Maize	C	-	-		130
				Sorghum	C	-	A		150
				Ginger	C	A	-		600
				Groundnut	C	A	A		104
				Vegetable	C	A	A		708
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	A	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
\- : Not suitable

Crop Diversification Potential for KH004

Code Number : KH004 Name of Scheme : Serdang Batu 18
State : Kedah District : Bandar Baharu
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2Dt

Irrigable area (ha) Main : 40 Off : 40
Trafficability of farm machinery : Good
Paddy planting for last 3 years : Idle

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		600
				Groundnut	C	A	A		104
				Vegetable	C	A	A		708
2	*	*	*	Durian/Mango	C	A	A	11.0	272
				Guava	C	A	-	3.1	960
				Banana	C	A	-	0.7	420
				Cashewnut	C	A	A		70
				Papaya	C	A	-		1,000
				Citrus	C	A	-		420
				Pineapple	C	A	-	0.5	960
				Coconut	A	-	A		175
				Oilpalm	C	A	A	0.9	768
				Cocoa	C	A	A	0.6	124
				Rubber	A	A	A	1.1	55
				Coffee	C	A	A		35
				Tea	C	A	A		52
				Clove	C	A	A		12
				Tabacco	C	A	A		360
				Sugarcane	C	A	A		800
				Pepper	C	A	A		118
3	*	*	*	Maize	C	-	-		130
				Sorghum	C	-	A		150
				Ginger	C	A	-		600
				Groundnut	C	A	A		104
				Vegetable	C	A	A		708
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	A	2.0	
6	*	*	*						
7									
8	*	*	*		*	*	*		

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH005

Code Number : KH005 Name of Scheme : Kg. Sg. Tengas
State : Kedah District : Bandar Baharu
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2Dt

Irrigable area (ha) Main : 40 Off : 40
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		600
				Groundnut	C	A	A		104
				Vegetable	C	A	A		708
2	*	*	*	Durian/Mango	C	A	A	11.0	272
				Guava	C	A	-	3.1	960
				Banana	C	A	-	0.7	420
				Cashewnut	C	A	A		70
				Papaya	C	A	-		1,000
				Citrus	C	A	-		420
				Pineapple	C	A	-	0.5	960
				Coconut	A	-	A		175
				Oilpalm	C	A	A	0.9	768
				Cocoa	C	A	A	0.6	124
				Rubber	A	A	A	1.1	55
				Coffee	C	A	A		35
				Tea	C	A	A		52
				Clove	C	A	A		12
				Tabacco	C	A	A		360
				Sugarcane	C	A	A		800
				Pepper	C	A	A		118
3	*	*	*	Maize	C	-	-		130
				Sorghum	C	-	A		150
				Ginger	C	A	-		600
				Groundnut	C	A	A		104
				Vegetable	C	A	A		708
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	A	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH006

Code Number : KH006 Name of Scheme : Kg. Sg. Taka
State : Kedah District : Bandar Baharu
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2Dt

Irrigable area (ha) Main : 97 Off : 97
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		1,455
				Groundnut	C	A	A		253
				Vegetable	C	A	A		1,717
2	*	*	*	Durian/Mango	C	A	-	11.0	660
				Guava	C	A	-	3.1	2,328
				Banana	C	A	-	0.7	1,019
				Cashewnut	C	A	A		171
				Papaya	C	A	-		2,425
				Citrus	C	A	-		1,019
				Pineapple	C	A	-	0.5	2,328
				Coconut	A	-	A		425
				Oilpalm	C	A	A	0.9	1,862
				Cocoa	C	A	A	0.6	301
				Rubber	A	A	A	1.1	133
				Coffee	C	A	A		85
				Tea	C	A	A		126
				Clove	C	A	A		30
				Tabacco	C	A	A		873
				Sugarcane	C	A	A		1,940
				Pepper	C	A	A		286
3	*	*	*	Maize	C	-	-		315
				Sorghum	C	-	A		364
				Ginger	C	A	-		1,455
				Groundnut	C	A	A		253
				Vegetable	C	A	A		1,717
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH007

Code Number : KH007 Name of Scheme : Kg. Berjaya
State : Kedah District : Bandar Baharu
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 2dt

Irrigable area (ha) Main : 150 Off : 150
Trafficability of farm machinery : Good
Paddy planting for last 3 years : Idle

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	B	A	-	2.5	2,250
				Groundnut	A	A	A	0.9	392
				Vegetable	A	A	-	13.8	2,655
2	*	*	*	Durian/Mango	C	A	-	11.0	1,020
				Guava	C	A	-	3.1	3,600
				Banana	C	A	-	0.7	1,575
				Cashewnut	A	A	A	8.7	264
				Papaya	B	A	-	0.6	3,750
				Citrus	B	A	-	2.9	1,575
				Pineapple	A	A	-	9.5	3,600
				Coconut	A	-	A		657
				Oilpalm	C	A	A	0.9	2,880
				Cocoa	C	A	A	0.6	465
				Rubber	B	A	A	0.6	206
				Sago	C	-	A		1,350
				Coffee	A	A	A	0.7	132
				Tea	A	A	A	10.4	195
				Clove	B	A	A	1.1	47
				Tabacco	B	A	A	0.7	1,350
				Sugarcane	A	A	A	3.3	3,000
				Pepper	A	A	A	16.4	443
3	*	*	*	Maize	A	-	-		488
				Sorghum	A	-	A		563
				Ginger	B	A	-	2.5	2,250
				Groundnut	A	A	A	0.9	392
				Vegetable	A	A	-	13.8	2,655
4	*	*	*	Fodder grasses	A	-	A		
				Pasture	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8	*	*	*		*	*	*		

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH008

Code Number : KH008 Name of Scheme : Sidam Kanan
State : Kedah District : Kulim
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 2DnT

Irrigable area (ha) Main : 500 Off : 500
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		7,500
				Groundnut	C	A	A		1,305
				Vegetable	C	A	-		8,850
2	*	*	*	Durian/Mango	C	A	-	11.0	3,400
				Guava	C	A	-	3.1	12,000
				Banana	C	A	-	0.7	5,250
				Cashewnut	C	A	A		880
				Papaya	C	A	-		12,500
				Citrus	C	A	-		5,250
				Pineapple	C	A	-	0.5	12,000
				Coconut	A	-	A		2,190
				Oilpalm	C	A	A	0.9	9,600
				Cocoa	C	A	A	0.6	1,550
				Rubber	C	A	A		685
				Coffee	C	A	A		440
				Tea	C	A	A		650
				Clove	C	A	A		155
				Tabacco	C	A	A		4,500
				Sugarcane	C	A	A		10,000
				Pepper	C	A	A		1,475
3	*	*	*	Maize	C	-	-		1,625
				Sorghum	C	-	A		1,875
				Ginger	C	A	-		7,500
				Groundnut	C	A	A		1,305
				Vegetable	C	A	-		8,850
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH009

Code Number : KH009 Name of Scheme : Sg. Seluang
State : Kedah District : Kulim
Type of Scheme : Gravity
Soil series : 2DnT

Irrigable area (ha) Main : 134 Off : 0
Trafficability of farm machinery : Good
Paddy planting for last 3 years : Converted to other crops

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		2,010
				Groundnut	C	A	A		350
				Vegetable	C	A	A		2,372
2	*	*	*	Durian/Mango	C	A	-	11.0	911
				Guava	C	A	-	3.1	3,216
				Banana	C	A	-	0.7	1,407
				Cashewnut	C	A	A		236
				Papaya	C	A	-		3,350
				Citrus	C	A	-		1,407
				Pineapple	C	A	-	0.5	3,216
				Coconut	A	-	A		587
				Oilpalm	C	A	A	0.9	2,573
				Cocoa	C	A	A	0.6	415
				Rubber	C	A	A		184
				Coffee	C	A	A		118
				Tea	C	A	A		174
				Clove	C	A	A		42
				Tabacco	C	A	A		1,206
				Sugarcane	C	A	A		2,680
				Pepper	C	A	A		395
3	*	*	*	Maize	C	-	-		436
				Sorghum	C	-	A		503
				Ginger	C	A	-		2,010
				Groundnut	C	A	A		350
				Vegetable	C	A	A		2,372
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH010

Code Number : KH010 Name of Scheme : Ulu Mahang
State : Kedah District : Kulim
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2Dt

Irrigable area (ha) Main : 61 Off : 61
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		915
				Groundnut	C	A	A		159
				Vegetable	C	A	A		1,080
2	*	*	*	Durian/Mango	C	A	-	11.0	415
				Guava	C	A	-	3.1	1,464
				Banana	C	A	-	0.7	641
				Cashewnut	C	A	A		107
				Papaya	C	A	-		1,525
				Citrus	C	A	-		641
				Pineapple	C	A	-	0.5	1,464
				Coconut	A	-	A		267
				Oilpalm	C	A	A	0.9	1,171
				Cocoa	C	A	A	0.6	189
				Rubber	A	A	A	1.1	84
				Coffee	C	A	A		54
				Tea	C	A	A		79
				Clove	C	A	A		19
				Tabacco	C	A	A		549
				Sugarcane	C	A	A		1,220
				Pepper	C	A	A		180
3	*	*	*	Maize	C	-	-		198
				Sorghum	C	-	A		229
				Ginger	C	A	-		915
				Groundnut	C	A	A		159
				Vegetable	C	A	A		1,080
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH011

Code Number : KH011 Name of Scheme : Bendang Sena
State : Kedah District : Kulim
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2DT

Irrigable area (ha) Main : 23 Off : 23
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		345
				Groundnut	C	A	A		60
				Vegetable	C	A	A		407
2	*	*	*	Durian/Mango	C	A	-	11.0	156
				Guava	C	A	-	3.1	552
				Banana	C	A	A	0.7	242
				Cashewnut	C	A	A		40
				Papaya	C	A	-		575
				Citrus	C	A	-		242
				Pineapple	C	A	-	0.5	552
				Coconut	A	-	A		101
				Oilpalm	C	A	A	0.9	442
				Cocoa	C	A	A	0.6	71
				Rubber	A	A	A	1.1	32
				Coffee	C	A	A		20
				Tea	C	A	A		30
				Clove	C	A	A		7
				Tabacco	C	A	A		207
				Sugercane	C	A	A		460
				Pepper	C	A	A		68
3	*	*	*	Maize	C	-	-		75
				Sorghum	C	-	A		86
				Ginger	C	A	-		345
				Groundnut	C	A	A		60
				Vegetable	C	A	A		407
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	A	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
\- : Not suitable

Crop Diversification Potential for KH012

Code Number : KH012 Name of Scheme : Jemerli
State : Kedah District : Kulim
Type of Scheme : Gravity
Soil series : 2dt

Irrigable area (ha) Main : 445 Off : 445
Trafficability of farm machinery : Good
Paddy planting for last 3 years : Converted to other crops

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	B	A	-	2.5	6,675
				Groundnut	A	A	A	0.9	1,161
				Vegetable	A	A	-	13.8	7,877
2	*	*	*	Durian/Mango	C	A	-	11.0	3,026
				Guava	C	A	-	3.1	10,680
				Banana	C	A	-	0.7	4,673
				Cashewnut	A	A	A	8.7	783
				Papaya	B	A	-	0.6	11,125
				Citrus	B	A	-	2.9	4,673
				Pineapple	A	A	-	9.5	10,680
				Coconut	A	-	A		1,949
				Oilpalm	C	A	A	0.9	8,544
				Cocoa	C	A	A	0.6	1,380
				Rubber	B	A	A	0.6	610
				Sago	C	-	A		4,005
				Coffee	A	A	A	0.7	392
				Tea	A	A	A	10.4	579
				Clove	B	A	A	1.1	138
				Tabacco	B	A	A	0.7	4,005
				Sugarcane	A	A	A	3.3	8,900
				Pepper	A	A	A	16.4	1,313
3	*	*	*	Maize	A	-	-		1,446
				Sorghum	A	-	A		1,669
				Ginger	B	A	-	2.5	6,675
				Groundnut	A	A	A	0.9	1,161
				Vegetable	A	A	-	13.8	7,877
4	*	*	*	Fodder grasses	A	-	A		
				Pasture	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH013

Code Number : KH013 Name of Scheme : Otak Kerbau
State : Kedah District : Kulim
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2dt

Irrigable area (ha) Main : 193 Off : 193
Trafficability of farm machinery : Good
Paddy planting for last 3 years : Idle

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	B	A	-	2.5	2,895
				Groundnut	A	A	A	0.9	504
				Vegetable	A	A	A	13.8	3,416
2	*	*	*	Durian/Mango	C	A	-	11.0	1,312
				Guava	C	A	-	3.1	4,632
				Banana	C	A	-	0.7	2,027
				Cashewnut	A	A	A	8.7	340
				Papaya	B	A	-	0.6	4,825
				Citrus	B	A	-	2.9	2,027
				Pineapple	A	A	-	9.5	4,632
				Coconut	A	-	A		845
				Oilpalm	C	A	A	0.9	3,706
				Cocoa	C	A	A	0.6	598
				Rubber	B	A	A	0.6	264
				Sago	C	-	A		1,737
				Coffee	A	A	A	0.7	170
				Tea	A	A	A	10.4	251
				Clove	B	A	A	1.1	60
				Tabacco	B	A	A	0.7	1,737
				Sugarcane	A	A	A	3.3	3,860
				Pepper	A	A	A	16.4	569
3	*	*	*	Maize	A	-	-		627
				Sorghum	A	-	A		724
				Ginger	B	A	-	2.5	2,895
				Groundnut	A	A	A	0.9	504
				Vegetable	A	A	A	13.8	3,416
4	*	*	*	Fodder grasses	A	-	A		
				Pasture	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7									
8	*	*	*		*	*	*		

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH014

Code Number : KH014 Name of Scheme : Kulim
State : Kedah District : Kulim
Type of Scheme : Gravity
Water source : Limited to single cropping
Soil series : 2DT

Irrigable area (ha) Main : 152 Off : 152
Trafficability of farm machinery : Good
Paddy planting for last 3 years : Less than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		2,280
				Groundnut	C	A	A		397
				Vegetable	C	A	A		2,690
2	*	*	*	Durian/Mango	C	A	-	11.0	1,034
				Guava	C	A	-	3.1	3,648
				Banana	C	A	-	0.7	1,596
				Cashewnut	C	A	A		268
				Papaya	C	A	-		3,800
				Citrus	C	A	-		1,596
				Pineapple	C	A	-	0.5	3,648
				Coconut	A	-	A		666
				Oilpalm	C	A	A	0.9	2,918
				Cocoa	C	A	A	0.6	471
				Rubber	A	A	A	1.1	208
				Coffee	C	A	A		134
				Tea	C	A	A		198
				Clove	C	A	A		47
				Tabacco	C	A	A		1,368
				Sugercane	C	A	A		3,040
				Pepper	C	A	A		448
3	*	*	*	Maize	C	-	-		494
				Sorghum	C	-	A		570
				Ginger	C	A	-		2,280
				Groundnut	C	A	A		397
				Vegetable	C	A	A		2,690
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5									
6									
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH015

Code Number : KH015 Name of Scheme : Terat Batu
State : Kedah District : Kulim
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 2Dt

Irrigable area (ha) Main : 28 Off : 28
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		420
				Groundnut	C	A	A		73
				Vegetable	C	A	A		496
2	*	*	*	Durian/Mango	C	A	-	11.0	190
				Guava	C	A	-	3.1	672
				Banana	C	A	A	0.7	294
				Cashewnut	C	A	A		49
				Papaya	C	A	-		700
				Citrus	C	A	-		294
				Pineapple	C	A	-	0.5	672
				Coconut	A	-	A		123
				Oilpalm	C	A	A	0.9	538
				Cocoa	C	A	A	0.6	87
				Rubber	A	A	A	1.1	38
				Coffee	C	A	A		25
				Tea	C	A	A		36
				Clove	C	A	A		9
				Tabacco	C	A	A		252
				Sugarcane	C	A	A		560
				Pepper	C	A	A		83
3	*	*	*	Maize	C	-	-		91
				Sorghum	C	-	A		105
				Ginger	C	A	-		420
				Groundnut	C	A	A		73
				Vegetable	C	A	A		496
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	A	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
\- : Not suitable

Crop Diversification Potential for KH016

Code Number : KH016 Name of Scheme : Selarung Panjang
State : Kedah District : Kulim
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2dt

Irrigable area (ha) Main : 41 Off : 0
Trafficability of farm machinery : Good
Paddy planting for last 3 years : Idle

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	B	A	-	2.5	615
				Groundnut	A	A	A	0.9	107
				Vegetable	A	A	A	13.8	726
2	*	*	*	Durian/Mango	C	A	-	11.0	279
				Guava	C	A	-	3.1	984
				Banana	C	A	-	0.7	431
				Cashewnut	A	A	A	8.7	72
				Papaya	B	A	-	0.6	1,025
				Citrus	B	A	-	2.9	431
				Pineapple	A	A	-	9.5	984
				Coconut	A	-	A		180
				Oilpalm	C	A	A	0.9	787
				Cocoa	C	A	A	0.6	127
				Rubber	B	A	A	0.6	56
				Sago	C	-	A		369
				Coffee	A	A	A	0.7	36
				Tea	A	A	A	10.4	53
				Clove	B	A	A	1.1	13
				Tabacco	B	A	A	0.7	369
				Sugarcane	A	A	A	3.3	820
				Pepper	A	A	A	16.4	121
3	*	*	*	Maize	A	-	-		133
				Sorghum	A	-	A		154
				Ginger	B	A	-	2.5	615
				Groundnut	A	A	A	0.9	107
				Vegetable	A	A	A	13.8	726
4	*	*	*	Fodder grasses	A	-	A		
				Pasture	A	-	A		
5	*	*	*			A	A	2.0	
6	*	*	*		A	A	A		
7									
8	*	*	*		*	*	*		

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH017

Code Number : KH017 Name of Scheme : Merbau Pulas
State : Kedah District : Kulim
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 2DT

Irrigable area (ha) Main : 68 Off : 68
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		1,020
				Groundnut	C	A	A		177
				Vegetable	C	A	A		1,204
2	*	*	*	Durian/Mango	C	A	-	11.0	462
				Guava	C	A	-	3.1	1,632
				Banana	C	A	-	0.7	714
				Cashewnut	C	A	A		120
				Papaya	C	A	-		1,700
				Citrus	C	A	-		714
				Pineapple	C	A	-	0.5	1,632
				Coconut	A	-	A		298
				Oilpalm	C	A	A	0.9	1,306
				Cocoa	C	A	A	0.6	211
				Rubber	A	A	A	1.1	93
				Coffee	C	A	A		60
				Tea	C	A	A		88
				Clove	C	A	A		21
				Tabacco	C	A	A		612
				Sugercane	C	A	A		1,360
				Pepper	C	A	A		201
3	*	*	*	Maize	C	-	-		221
				Sorghum	C	-	A		255
				Ginger	C	A	-		1,020
				Groundnut	C	A	A		177
				Vegetable	C	A	A		1,204
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH018

Code Number : KH018 Name of Scheme : Padang Maha/Pagar Museh
State : Kedah District : Kulim
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2Dt

Irrigable area (ha) Main : 150 Off : 150
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		2,250
				Groundnut	C	A	A		392
				Vegetable	C	A	A		2,655
2	*	*	*	Durian/Mango	C	A	-	11.0	1,020
				Guava	C	A	-	3.1	3,600
				Banana	C	A	-	0.7	1,575
				Cashewnut	C	A	A		264
				Papaya	C	A	-		3,750
				Citrus	C	A	-		1,575
				Pineapple	C	A	-	0.5	3,600
				Coconut	A	-	A		657
				Oilpalm	C	A	A	0.9	2,880
				Cocoa	C	A	A	0.6	465
				Rubber	A	A	A	1.1	206
				Coffee	C	A	A		132
				Tea	C	A	A		195
				Clove	C	A	A		47
				Tabacco	C	A	A		1,350
				Sugarcane	C	A	A		3,000
				Pepper	C	A	A		443
3	*	*	*	Maize	C	-	-		488
				Sorghum	C	-	A		563
				Ginger	C	A	-		2,250
				Groundnut	C	A	A		392
				Vegetable	C	A	A		2,655
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH019

Code Number : KH019 Name of Scheme : Kg. Lobak
State : Kedah District : Kulim
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 2dt

Irrigable area (ha) Main : 28 Off : 20
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	B	A	-	2.5	420
				Groundnut	A	A	A	0.9	73
				Vegetable	A	A	A	13.8	496
2	*	*	*	Durian/Mango	C	A	-	11.0	190
				Guava	C	A	-	3.1	672
				Banana	C	A	A	0.7	294
				Cashewnut	A	A	A	8.7	49
				Papaya	B	A	-	0.6	700
				Citrus	B	A	-	2.9	294
				Pineapple	A	A	-	9.5	672
				Coconut	A	-	A		123
				Oilpalm	C	A	A	0.9	538
				Cocoa	C	A	A	0.6	87
				Rubber	B	A	A	0.6	38
				Sago	C	-	A		252
				Coffee	A	A	A	0.7	25
				Tea	A	A	A	10.4	36
				Clove	B	A	A	1.1	9
				Tabacco	B	A	A	0.7	252
				Sugarcane	A	A	A	3.3	560
				Pepper	A	A	A	16.4	83
3	*	*	*	Maize	A	-	-		91
				Sorghum	A	-	A		105
				Ginger	B	A	-	2.5	420
				Groundnut	A	A	A	0.9	73
				Vegetable	A	A	A	13.8	496
4	*	*	*	Fodder grasses	A	-	A		
				Pasture	A	-	A		
5	*	*	*			A	A	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH020

Code Number : KH020 Name of Scheme : Titi Karangan
State : Kedah District : Kulim
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2Dt

Irrigable area (ha) Main : 95 Off : 95
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		1,425
				Groundnut	C	A	A		248
				Vegetable	C	A	A		1,682
2	*	*	*	Durian/Mango	C	A	-	11.0	646
				Guava	C	A	-	3.1	2,280
				Banana	C	A	-	0.7	998
				Cashewnut	C	A	A		167
				Papaya	C	A	-		2,375
				Citrus	C	A	-		998
				Pineapple	C	A	-	0.5	2,280
				Coconut	A	-	A		416
				Oilpalm	C	A	A	0.9	1,824
				Cocoa	C	A	A	0.6	295
				Rubber	A	A	A	1.1	130
				Coffee	C	A	A		84
				Tea	C	A	A		124
				Clove	C	A	A		29
				Tabacco	C	A	A		855
				Sugarcane	C	A	A		1,900
				Pepper	C	A	A		280
3	*	*	*	Maize	C	-	-		309
				Sorghum	C	-	A		356
				Ginger	C	A	-		1,425
				Groundnut	C	A	A		248
				Vegetable	C	A	A		1,682
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH021

Code Number : KH021 Name of Scheme : Pulai
State : Kedah District : Baling
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 2dt

Irrigable area (ha) Main : 239 Off : 235
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	B	A	-	2.5	3,585
				Groundnut	A	A	A	0.9	623
				Vegetable	A	A	A	13.8	4,231
2	*	*	*	Durian/Mango	C	A	-	11.0	1,625
				Guava	C	A	-	3.1	5,736
				Banana	C	A	-	0.7	2,510
				Cashewnut	A	A	A	8.7	421
				Papaya	B	A	-	0.6	5,975
				Citrus	B	A	-	2.9	2,510
				Pineapple	A	A	-	9.5	5,736
				Coconut	A	-	A		1,047
				Oilpalm	C	A	A	0.9	4,589
				Cocoa	C	A	A	0.6	741
				Rubber	B	A	A	0.6	328
				Sago	C	-	A		2,501
				Coffee	A	A	A	0.7	211
				Tea	A	A	A	10.4	311
				Clove	B	A	A	1.1	74
				Tabacco	B	A	A	0.7	2,151
				Sugarcane	A	A	A	3.3	4,780
				Pepper	A	A	A	16.4	705
3	*	*	*	Maize	A	-	-		777
				Sorghum	A	-	A		896
				Ginger	B	A	-	2.5	3,585
				Groundnut	A	A	A	0.9	623
				Vegetable	A	A	A	13.8	4,231
4	*	*	*	Fodder grasses	A	-	A		
				Pasture	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
\- : Not suitable

Crop Diversification Potential for KH022

Code Number : KH022 Name of Scheme : Iboi
State : Kedah District : Baling
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2Dt

Irrigable area (ha) Main : 156 Off : 156
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		2,340
				Groundnut	C	A	A		407
				Vegetable	C	A	A		2,761
2	*	*	*	Durian/Mango	C	A	-	11.0	1,061
				Guava	C	A	-	3.1	3,744
				Banana	C	A	-	0.7	1,638
				Cashewnut	C	A	A		275
				Papaya	C	A	-		3,900
				Citrus	C	A	-		1,638
				Pineapple	C	A	-	0.5	3,744
				Coconut	A	-	A		683
				Oilpalm	C	A	A	0.9	2,995
				Cocoa	C	A	A	0.6	484
				Rubber	A	A	A	1.1	214
				Coffee	C	A	A		137
				Tea	C	A	A		203
				Clove	C	A	A		48
				Tabacco	C	A	A		1,404
				Sugarcane	C	A	A		3,120
				Pepper	C	A	A		460
3	*	*	*	Maize	C	-	-		507
				Sorghum	C	-	A		585
				Ginger	C	A	-		2,340
				Groundnut	C	A	A		407
				Vegetable	C	A	A		2,761
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
\- : Not suitable

Crop Diversification Potential for KH023

Code Number : KH023 Name of Scheme : Tawar
State : Kedah District : Baling
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2Dt

Irrigable area (ha) Main : 40 Off : 40
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		600
				Groundnut	C	A	A		104
				Vegetable	C	A	A		708
2	*	*	*	Durian/Mango	C	A	A	11.0	272
				Guava	C	A	-	3.1	960
				Banana	C	A	A	0.7	420
				Cashewnut	C	A	A		70
				Papaya	C	A	A		1,000
				Citrus	C	A	A		420
				Pineapple	C	A	-	0.5	960
				Coconut	A	-	A		175
				Oilpalm	C	A	A	0.9	768
				Cocoa	C	A	A	0.6	124
				Rubber	A	A	A	1.1	55
				Coffee	C	A	A		35
				Tea	C	A	A		52
				Clove	C	A	A		12
				Tabacco	C	A	A		360
				Sugarcane	C	A	A		800
				Pepper	C	A	A		118
3	*	*	*	Maize	C	-	-		130
				Sorghum	C	-	A		150
				Ginger	C	A	-		600
				Groundnut	C	A	A		104
				Vegetable	C	A	A		708
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	A	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH024

Code Number : KH024 Name of Scheme : Simpang Empat
State : Kedah District : Baling
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2DT

Irrigable area (ha) Main : 28 Off : 28
Trafficability of farm machinery : Good
Paddy planting for last 3 years : Less than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		420
				Groundnut	C	A	A		73
				Vegetable	C	A	A		496
2	*	*	*	Durian/Mango	C	A	A	11.0	190
				Guava	C	A	-	3.1	672
				Banana	C	A	A	0.7	294
				Cashewnut	C	A	A		49
				Papaya	C	A	A		700
				Citrus	C	A	A		294
				Pineapple	C	A	-	0.5	672
				Coconut	A	-	A		123
				Oilpalm	C	A	A	0.9	538
				Cocoa	C	A	A	0.6	87
				Rubber	A	A	A	1.1	38
				Coffee	C	A	A		25
				Tea	C	A	A		36
				Clove	C	A	A		9
				Tabacco	C	A	A		252
				Sugercane	C	A	A		560
				Pepper	C	A	A		83
3	*	*	*	Maize	C	-	-		91
				Sorghum	C	-	A		105
				Ginger	C	A	-		420
				Groundnut	C	A	A		73
				Vegetable	C	A	A		496
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	A	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH025

Code Number : KH025 Name of Scheme : Ulu Bakai
State : Kedah District : Baling
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2dt

Irrigable area (ha) Main : 75 Off : 75
Trafficability of farm machinery : Good
Paddy planting for last 3 years : Idle

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	B	A	-	2.5	1,125
				Groundnut	A	A	A	0.9	196
				Vegetable	A	A	A	13.8	1,328
2	*	*	*	Durian/Mango	C	A	A	11.0	510
				Guava	C	A	-	3.1	1,800
				Banana	C	A	A	0.7	788
				Cashewnut	A	A	A	8.7	132
				Papaya	B	A	-	0.6	1,875
				Citrus	B	A	A	2.9	788
				Pineapple	A	A	-	9.5	1,800
				Coconut	A	-	A		329
				Oilpalm	C	A	A	0.9	1,440
				Cocoa	C	A	A	0.6	233
				Rubber	B	A	A	0.6	103
				Sago	C	-	A		675
				Coffee	A	A	A	0.7	66
				Tea	A	A	A	10.4	98
				Clove	B	A	A	1.1	23
				Tabacco	B	A	A	0.7	675
				Sugarcane	A	A	A	3.3	1,500
				Pepper	A	A	A	16.4	221
3	*	*	*	Maize	A	-	-		244
				Sorghum	A	-	A		281
				Ginger	B	A	-	2.5	1,125
				Groundnut	A	A	A	0.9	196
				Vegetable	A	A	A	13.8	1,328
4	*	*	*	Fodder grasses	A	-	A		
				Pasture	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7									
8	*	*	*		*	*	*		

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH026

Code Number : KH026 Name of Scheme : Badang
State : Kedah District : Baling
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 3d(t)

Irrigable area (ha) Main : 50 Off : 50
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Vegetable	B	A	A	6.9	885
2	*	*	*	Coconut	B	-	A		219
				Sago	A	-	A		450
3	*	*	*	Vegetable	B	A	A	6.9	885
4	*	*	*	Fodder grasses	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH027

Code Number : KH027 Name of Scheme : Kg. Luar
State : Kedah District : Baling
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2DT

Irrigable area (ha) Main : 170 Off : 170
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		2,550
				Groundnut	C	A	A		444
				Vegetable	C	A	A		3,009
2	*	*	*	Durian/Mango	C	A	-	11.0	1,156
				Guava	C	A	-	3.1	4,080
				Banana	C	A	-	0.7	1,785
				Cashewnut	C	A	A		299
				Papaya	C	A	-		4,250
				Citrus	C	A	-		1,785
				Pineapple	C	A	-	0.5	4,080
				Coconut	A	-	A		745
				Oilpalm	C	A	A	0.9	3,264
				Cocoa	C	A	A	0.6	527
				Rubber	A	A	A	1.1	233
				Coffee	C	A	A		150
				Tea	C	A	A		221
				Clove	C	A	A		53
				Tabacco	C	A	A		1,530
				Sugercane	C	A	A		3,400
				Pepper	C	A	A		502
3	*	*	*	Maize	C	-	-		553
				Sorghum	C	-	A		638
				Ginger	C	A	-		2,550
				Groundnut	C	A	A		444
				Vegetable	C	A	A		3,009
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH028

Code Number : KH028 Name of Scheme : Ulu Sedim/Si Puteh
State : Kedah District : Baling
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2Dt

Irrigable area (ha) Main : 114 Off : 79
Trafficability of farm machinery : Good
Paddy planting for last 3 years : Less than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		1,710
				Groundnut	C	A	A		298
				Vegetable	C	A	A		2,018
2	*	*	*	Durian/Mango	C	A	A	11.0	775
				Guava	C	A	-	3.1	2,736
				Banana	C	A	A	0.7	1,197
				Cashewnut	C	A	A		201
				Papaya	C	A	-		2,850
				Citrus	C	A	-		1,197
				Pineapple	C	A	-	0.5	2,736
				Coconut	A	-	A		499
				Oilpalm	C	A	A	0.9	2,189
				Cocoa	C	A	A	0.6	353
				Rubber	A	A	A	1.1	156
				Coffee	C	A	A		100
				Tea	C	A	A		148
				Clove	C	A	A		35
				Tabacco	C	A	A		1,026
				Sugarcane	C	A	A		2,280
				Pepper	C	A	A		336
3	*	*	*	Maize	C	-	-		371
				Sorghum	C	-	A		428
				Ginger	C	A	-		1,710
				Groundnut	C	A	A		298
				Vegetable	C	A	A		2,018
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
\- : Not suitable

Crop Diversification Potential for KH029

Code Number : KH029 Name of Scheme : Landak
State : Kedah District : Baling
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 2Dt

Irrigable area (ha) Main : 40 Off : 40
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		600
				Groundnut	C	A	A		104
				Vegetable	C	A	A		708
2	*	*	*	Durian/Mango	C	A	A	11.0	272
				Guava	C	A	-	3.1	960
				Banana	C	A	A	0.7	420
				Cashewnut	C	A	A		70
				Papaya	C	A	A		1,000
				Citrus	C	A	A		420
				Pineapple	C	A	-	0.5	960
				Coconut	A	-	A		175
				Oilpalm	C	A	A	0.9	768
				Cocoa	C	A	A	0.6	124
				Rubber	A	A	A	1.1	55
				Coffee	C	A	A		35
				Tea	C	A	A		52
				Clove	C	A	A		12
				Tabacco	C	A	A		360
				Sugarcane	C	A	A		800
				Pepper	C	A	A		118
3	*	*	*	Maize	C	-	-		130
				Sorghum	C	-	A		150
				Ginger	C	A	-		600
				Groundnut	C	A	A		104
				Vegetable	C	A	A		708
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	A	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH030

Code Number : KH030 Name of Scheme : Kg. Mempelam
State : Kedah District : Baling
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2dt

Irrigable area (ha) Main : 67 Off : 67
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	B	A	-	2.5	1,005
				Groundnut	A	A	A	0.9	175
				Vegetable	A	A	A	13.8	1,186
2	*	*	*	Durian/Mango	C	A	A	11.0	456
				Guava	C	A	-	3.1	1,608
				Banana	C	A	A	0.7	704
				Cashewnut	A	A	A	8.7	118
				Papaya	B	A	-	0.6	1,675
				Citrus	B	A	A	2.9	704
				Pineapple	A	A	-	9.5	1,608
				Coconut	A	-	A		293
				Oilpalm	C	A	A	0.9	1,286
				Cocoa	C	A	A	0.6	208
				Rubber	B	A	A	0.6	92
				Sago	C	-	A		603
				Coffee	A	A	A	0.7	59
				Tea	A	A	A	10.4	87
				Clove	B	A	A	1.1	21
				Tabacco	B	A	A	0.7	603
				Sugarcane	A	A	A	3.3	1,340
				Pepper	A	A	A	16.4	198
3	*	*	*	Maize	A	-	-		218
				Sorghum	A	-	A		251
				Ginger	B	A	-	2.5	1,005
				Groundnut	A	A	A	0.9	175
				Vegetable	A	A	A	13.8	1,186
4	*	*	*	Fodder grasses	A	-	A		
				Pasture	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH031

Code Number : KH031 Name of Scheme : Tiak
State : Kedah District : Baling
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2Dt

Irrigable area (ha) Main : 109 Off : 109
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		1,635
				Groundnut	C	A	A		284
				Vegetable	C	A	A		1,929
2	*	*	*	Durian/Mango	C	A	A	11.0	741
				Guava	C	A	-	3.1	2,616
				Banana	C	A	A	0.7	1,145
				Cashewnut	C	A	A		192
				Papaya	C	A	-		2,725
				Citrus	C	A	-		1,145
				Pineapple	C	A	-	0.5	2,616
				Coconut	A	-	A		477
				Oilpalm	C	A	A	0.9	2,093
				Cocoa	C	A	A	0.6	338
				Rubber	A	A	A	1.1	149
				Coffee	C	A	A		96
				Tea	C	A	A		142
				Clove	C	A	A		34
				Tabacco	C	A	A		981
				Sugarcane	C	A	A		2,180
				Pepper	C	A	A		322
3	*	*	*	Maize	C	-	-		354
				Sorghum	C	-	A		409
				Ginger	C	A	-		1,635
				Groundnut	C	A	A		284
				Vegetable	C	A	A		1,929
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
\- : Not suitable

Crop Diversification Potential for KH032

Code Number : KH032 Name of Scheme : Tg. Pari
State : Kedah District : Baling
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2DT

Irrigable area (ha) Main : 98 Off : 97
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		1,470
				Groundnut	C	A	A		256
				Vegetable	C	A	A		1,735
2	*	*	*	Durian/Mango	C	A	A	11.0	667
				Guava	C	A	-	3.1	2,352
				Banana	C	A	A	0.7	1,030
				Cashewnut	C	A	A		173
				Papaya	C	A	-		2,450
				Citrus	C	A	-		1,030
				Pineapple	C	A	-	0.5	2,352
				Coconut	A	-	A		429
				Oilpalm	C	A	A	0.9	1,881
				Cocoa	C	A	A	0.6	302
				Rubber	A	A	A	1.1	134
				Coffee	C	A	A		86
				Tea	C	A	A		127
				Clove	C	A	A		30
				Tabacco	C	A	A		882
				Sugercane	C	A	A		1,960
				Pepper	C	A	A		289
3	*	*	*	Maize	C	-	-		318
				Sorghum	C	-	A		368
				Ginger	C	A	-		1,470
				Groundnut	C	A	A		255
				Vegetable	C	A	A		1,735
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
\- : Not suitable

Crop Diversification Potential for KH033

Code Number : KH033 Name of Scheme : Pantai Cicak
State : Kedah District : Baling
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 3d(t)

Irrigable area (ha) Main : 40 Off : 39
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Vegetable	B	A	A	6.9	708
2	*	*	*	Coconut	B	-	A		175
				Sago	A	-	A		360
3	*	*	*	Vegetable	B	A	A	6.9	708
4	*	*	*	Fodder grasses	A	-	A		
5	*	*	*			A	A	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH034

Code Number : KH034 Name of Scheme : Sg. Limau/Carok Sikin
State : Kedah District : Baling
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 2DT

Irrigable area (ha) Main : 85 Off : 85
Trafficability of farm machinery : Good
Paddy planting for last 3 years : Idle

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		1,275
				Groundnut	C	A	A		222
				Vegetable	C	A	A		1,505
2	*	*	*	Durian/Mango	C	A	A	11.0	578
				Guava	C	A	-	3.1	2,040
				Banana	C	A	A	0.7	893
				Cashewnut	C	A	A		150
				Papaya	C	A	-		2,125
				Citrus	C	A	A		893
				Pineapple	C	A	-	0.5	2,040
				Coconut	A	-	A		372
				Oilpalm	C	A	A	0.9	1,632
				Cocoa	C	A	A	0.6	264
				Rubber	A	A	A	1.1	116
				Coffee	C	A	A		75
				Tea	C	A	A		111
				Clove	C	A	A		26
				Tabacco	C	A	A		765
				Sugercane	C	A	A		1,700
				Pepper	C	A	A		251
3	*	*	*	Maize	C	-	-		276
				Sorghum	C	-	A		319
				Ginger	C	A	-		1,275
				Groundnut	C	A	A		222
				Vegetable	C	A	A		1,505
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7									
8	*	*	*		*	*	*		

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH035

Code Number : KH035 Name of Scheme : Sidam Kiri
State : Kedah District : Kuala Muda
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 2Dt

Irrigable area (ha) Main : 219 Off : 219
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		3,285
				Groundnut	C	A	A		572
				Vegetable	C	A	A		3,876
2	*	*	*	Durian/Mango	C	A	-	11.0	1,489
				Guava	C	A	-	3.1	5,256
				Banana	C	A	-	0.7	2,300
				Cashewnut	C	A	A		385
				Papaya	C	A	-		5,475
				Citrus	C	A	-		2,300
				Pineapple	C	A	-	0.5	5,256
				Coconut	A	-	A		959
				Oilpalm	C	A	A	0.9	4,205
				Cocoa	C	A	A	0.6	679
				Rubber	A	A	A	1.1	300
				Coffee	C	A	A		193
				Tea	C	A	A		285
				Clove	C	A	A		68
				Tabacco	C	A	A		1,971
				Sugarcane	C	A	A		4,380
				Pepper	C	A	A		646
3	*	*	*	Maize	C	-	-		712
				Sorghum	C	-	A		821
				Ginger	C	A	-		3,285
				Groundnut	C	A	A		572
				Vegetable	C	A	A		3,876
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
\- : Not suitable

Crop Diversification Potential for KH036

Code Number : KH036 Name of Scheme : Pekula
State : Kedah District : Kuala Muda
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 2dt

Irrigable area (ha) Main : 1557 Off : 1088
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	B	A	-	2.5	23,355
				Groundnut	A	A	A	0.9	4,064
				Vegetable	A	A	-	13.8	27,559
2	*	*	*	Durian/Mango	C	A	-	11.0	10,588
				Guava	C	A	-	3.1	37,368
				Banana	C	A	-	0.7	16,349
				Cashewnut	A	A	A	8.7	2,740
				Papaya	B	A	-	0.6	38,925
				Citrus	B	A	-	2.9	16,349
				Pineapple	A	A	-	9.5	37,368
				Coconut	A	-	A		6,820
				Oilpalm	C	A	A	0.9	29,894
				Cocoa	C	A	A	0.6	4,827
				Rubber	B	A	A	0.6	2,133
				Sago	C	-	A		14,013
				Coffee	A	A	A	0.7	1,370
				Tea	A	A	A	10.4	2,024
				Clove	B	A	A	1.1	483
				Tabacco	B	A	A	0.7	14,013
				Sugarcane	A	A	A	3.3	31,140
				Pepper	A	A	A	16.4	4,593
3	*	*	*	Maize	A	-	-		5,060
				Sorghum	A	-	A		5,839
				Ginger	B	A	-	2.5	23,355
				Groundnut	A	A	A	0.9	4,064
				Vegetable	A	A	-	13.8	27,559
4	*	*	*	Fodder grasses	A	-	A		
				Pasture	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH037

Code Number : KH037 Name of Scheme : Sg. Gelam
State : Kedah District : Kuala Muda
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2Dt

Irrigable area (ha) Main : 154 Off : 150
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		2,310
				Groundnut	C	A	A		403
				Vegetable	C	A	A		2,726
2	*	*	*	Durian/Mango	C	A	A	11.0	1,047
				Guava	C	A	-	3.1	3,696
				Banana	C	A	A	0.7	1,617
				Cashewnut	C	A	A		271
				Papaya	C	A	-		3,850
				Citrus	C	A	-		1,617
				Pineapple	C	A	-	0.5	3,696
				Coconut	A	-	A		675
				Oilpalm	C	A	A	0.9	2,957
				Cocoa	C	A	A	0.6	477
				Rubber	A	A	A	1.1	211
				Coffee	C	A	A		136
				Tea	C	A	A		200
				Clove	C	A	A		48
				Tabacco	C	A	A		1,386
				Sugarcane	C	A	A		3,080
				Pepper	C	A	A		455
3	*	*	*	Maize	C	-	-		501
				Sorghum	C	-	A		578
				Ginger	C	A	-		2,310
				Groundnut	C	A	A		403
				Vegetable	C	A	A		2,726
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH038

Code Number : KH038 Name of Scheme : Merbok Bunding
State : Kedah District : Kuala Muda
Type of Scheme : Controlled drainage
Water source : Insufficient for main season paddy
Soil series : 2d

Irrigable area (ha) Main : 1100 Off : 0
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Groundnut	A	A	A	0.9	2,871
				Vegetable	A	A	-	13.8	19,470
2	*	*	*	Durian/Mango	A	A	-	43.6	7,480
				Guava	A	A	-	12.2	26,400
				Banana	A	A	-	2.7	11,550
				Cashewnut	A	A	A	8.7	1,936
				Citrus	B	A	-	2.9	11,550
				Pineapple	A	A	-	9.5	26,400
				Coconut	A	-	A		4,818
				Oilpalm	A	A	A	3.6	21,120
				Cocoa	A	A	A	2.2	3,410
				Rubber	B	A	A	0.6	1,507
				Coffee	B	A	A	0.4	968
				Tea	A	A	A	10.4	1,430
				Clove	B	A	A	1.1	341
				Tabacco	B	A	A	0.7	9,900
				Sugarcane	A	A	A	3.3	22,000
				Pepper	A	A	A	16.4	3,245
3									
4	*	*	*	Fodder grasses	A	-	A		
				Pasture	A	-	A		
5									
6									
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH039

Code Number : KH039 Name of Scheme : Pinang Tunngal
State : Kedah District : Kuala Muda
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 2d

Irrigable area (ha) Main : 279 Off : 198
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Groundnut	A	A	A	0.9	728
				Vegetable	A	A	A	13.8	4,938
2	*	*	*	Durian/Mango	A	A	-	43.6	1,897
				Guava	A	A	-	12.2	6,696
				Banana	A	A	-	2.7	2,929
				Cashewnut	A	A	A	8.7	491
				Citrus	B	A	-	2.9	2,929
				Pineapple	A	A	-	9.5	6,694
				Coconut	A	-	A		1,222
				Oilpalm	A	A	A	3.6	5,357
				Cocoa	A	A	A	2.2	865
				Rubber	B	A	A	0.6	382
				Coffee	B	A	A	0.4	245
				Tea	A	A	A	10.4	363
				Clove	B	A	A	1.1	86
				Tabacco	B	A	A	0.7	2,511
				Sugarcane	A	A	A	3.3	5,580
				Pepper	A	A	A	16.4	824
3	*	*	*	Maize	A	-	-		907
				Sorghum	A	-	A		1,047
				Groundnut	A	A	A	0.9	728
				Vegetable	A	A	A	13.8	4,938
4	*	*	*	Fodder grasses	A	-	A		
				Pasture	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH040

Code Number : KH040 Name of Scheme : Tandop Pekan Merbok
State : Kedah District : Kuala Muda
Type of Scheme : Gravity
Water source : Limited to single cropping
Soil series : 2Dt

Irrigable area (ha) Main : 77 Off : 71
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		1,155
				Groundnut	C	A	A		201
				Vegetable	C	A	A		1,363
2	*	*	*	Durian/Mango	C	A	A	11.0	524
				Guava	C	A	-	3.1	1,848
				Banana	C	A	A	0.7	809
				Cashewnut	C	A	A		136
				Papaya	C	A	-		1,925
				Citrus	C	A	A		809
				Pineapple	C	A	-	0.5	1,848
				Coconut	A	-	A		337
				Oilpalm	C	A	A	0.9	1,478
				Cocoa	C	A	A	0.6	239
				Rubber	A	A	A	1.1	105
				Coffee	C	A	A		67
				Tea	C	A	A		100
				Clove	C	A	A		24
				Tabacco	C	A	A		693
				Sugarcane	C	A	A		1,540
				Pepper	C	A	A		227
3	*	*	*	Maize	C	-	-		251
				Sorghum	C	-	A		289
				Ginger	C	A	-		1,155
				Groundnut	C	A	A		201
				Vegetable	C	A	A		1,363
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5									
6									
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH041

Code Number : KH041 Name of Scheme : Kota II
State : Kedah District : Kuala Muda
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 2dt

Irrigable area (ha) Main : 2149 Off : 2149
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	B	A	-	2.5	32,235
				Groundnut	A	A	A	0.9	5,609
				Vegetable	A	A	-	13.8	38,037
2	*	*	*	Durian/Mango	C	A	-	11.0	14,613
				Guava	C	A	-	3.1	51,576
				Banana	C	A	-	0.7	22,565
				Cashewnut	A	A	A	8.7	3,782
				Papaya	B	A	-	0.6	53,725
				Citrus	B	A	-	2.9	22,565
				Pineapple	A	A	-	9.5	51,576
				Coconut	A	-	A		9,413
				Oilpalm	C	A	A	0.9	41,261
				Cocoa	C	A	A	0.6	6,662
				Rubber	B	A	A	0.6	2,944
				Sago	C	-	A		19,341
				Coffee	A	A	A	0.7	1,891
				Tea	A	A	A	10.4	2,794
				Clove	B	A	A	1.1	666
				Tabacco	B	A	A	0.7	19,341
				Sugarcane	A	A	A	3.3	42,980
				Pepper	A	A	A	16.4	6,340
3	*	*	*	Maize	A	-	-		6,984
				Sorghum	A	-	A		8,059
				Ginger	B	A	-	2.5	32,235
				Groundnut	A	A	A	0.9	5,609
				Vegetable	A	A	-	13.8	38,037
4	*	*	*	Fodder grasses	A	-	A		
				Pasture	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH042

Code Number : KH042 Name of Scheme : Pantai Prai/Serukam
State : Kedah District : Kuala Muda
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 2DT

Irrigable area (ha) Main : 259 Off : 259
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		3,885
				Groundnut	C	A	A		676
				Vegetable	C	A	A		4,584
2	*	*	*	Durian/Mango	C	A	-	11.0	1,761
				Guava	C	A	-	3.1	6,216
				Banana	C	A	-	0.7	2,720
				Cashewnut	C	A	A		456
				Papaya	C	A	-		6,475
				Citrus	C	A	-		2,720
				Pineapple	C	A	-	0.5	6,216
				Coconut	A	-	A		1,134
				Oilpalm	C	A	A	0.9	4,973
				Cocoa	C	A	A	0.6	803
				Rubber	A	A	A	1.1	355
				Coffee	C	A	A		228
				Tea	C	A	A		337
				Clove	C	A	A		80
				Tabacco	C	A	A		2,331
				Sugercane	C	A	A		5,180
				Pepper	C	A	A		764
3	*	*	*	Maize	C	-	-		842
				Sorghum	C	-	A		971
				Ginger	C	A	-		3,885
				Groundnut	C	A	A		676
				Vegetable	C	A	A		4,584
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
\- : Not suitable

Crop Diversification Potential for KH043

Code Number : KH043 Name of Scheme : Kemumbong
State : Kedah District : Kuala Muda
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 2DT

Irrigable area (ha) Main : 55 Off : 55
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B.C)	Production (ton)
1	*	*	*	Ginger	C	A	-		825
				Groundnut	C	A	A		144
				Vegetable	C	A	A		974
2	*	*	*	Durian/Mango	C	A	A	11.0	374
				Guava	C	A	-	3.1	1,320
				Banana	C	A	A	0.7	578
				Cashewnut	C	A	A		97
				Papaya	C	A	-		1,375
				Citrus	C	A	A		578
				Pineapple	C	A	-	0.5	1,320
				Coconut	A	-	A		241
				Oilpalm	C	A	A	0.9	1,056
				Cocoa	C	A	A	0.6	171
				Rubber	A	A	A	1.1	75
				Coffee	C	A	A		48
				Tea	C	A	A		72
				Clove	C	A	A		17
				Tabacco	C	A	A		495
				Sugercane	C	A	A		1,100
				Pepper	C	A	A		162
3	*	*	*	Maize	C	-	-		179
				Sorghum	C	-	A		206
				Ginger	C	A	-		825
				Groundnut	C	A	A		144
				Vegetable	C	A	A		974
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
\- : Not suitable

Crop Diversification Potential for KH044

Code Number : KH044 Name of Scheme : Lubok Kiab
State : Kedah District : Kuala Muda
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 2DT

Irrigable area (ha) Main : 53 Off : 53
Trafficability of farm machinery : Good
Paddy planting for last 3 years : Idle

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		795
				Groundnut	C	A	A		138
				Vegetable	C	A	A		938
2	*	*	*	Durian/Mango	C	A	A	11.0	360
				Guava	C	A	-	3.1	1,272
				Banana	C	A	A	0.7	557
				Cashewnut	C	A	A		93
				Papaya	C	A	-		1,325
				Citrus	C	A	A		557
				Pineapple	C	A	-	0.5	1,272
				Coconut	A	-	A		232
				Oilpalm	C	A	A	0.9	1,018
				Cocoa	C	A	A	0.6	164
				Rubber	A	A	A	1.1	73
				Coffee	C	A	A		47
				Tea	C	A	A		69
				Clove	C	A	A		16
				Tabacco	C	A	A		477
				Sugercane	C	A	A		1,060
				Pepper	C	A	A		156
3	*	*	*	Maize	C	-	-		172
				Sorghum	C	-	A		199
				Ginger	C	A	-		795
				Groundnut	C	A	A		138
				Vegetable	C	A	A		938
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7									
8	*	*	*		*	*	*		

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH045

Code Number : KH045 Name of Scheme : Kg. Parit
State : Kedah District : Sik
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 3d(T)

Irrigable area (ha) Main : 192 Off : 192
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Vegetable	B	A	-	6.9	3,398
2	*	*	*	Coconut	B	-	A		841
				Sago	A	-	A		1,728
3	*	*	*	Vegetable	B	A	-	6.9	3,398
4	*	*	*	Fodder grasses	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH046

Code Number : KH046 Name of Scheme : Tg. Sik
State : Kedah District : Sik
Type of Scheme : Gravity
Water source : *Sufficient for double cropping*
Soil series : 3d(T)

Irrigable area (ha) Main : 91 Off : 91
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Vegetable	B	A	-	6.9	1,611
2	*	*	*	Coconut	B	-	A		399
				Sago	A	-	A		819
3	*	*	*	Vegetable	B	A	-	6.9	1,611
4	*	*	*	Fodder grasses	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH047

Code Number : KH047 Name of Scheme : Tg. Besar
State : Kedah District : Sik
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 3d(T)

Irrigable area (ha) Main : 172 Off : 172
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Vegetable	B	A	-	6.9	3,044
2	*	*	*	Coconut	B	-	A		753
				Sago	A	-	A		1,548
3	*	*	*	Vegetable	B	A	-	6.9	3,044
4	*	*	*	Fodder grasses	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH048

Code Number : KH048 Name of Scheme : Sg. Teloi
State : Kedah District : Sik
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 3d(T)

Irrigable area (ha) Main : 71 Off : 71
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Vegetable	B	A	A	6.9	1,257
2	*	*	*	Coconut	B	-	A		311
				Sago	A	-	A		639
3	*	*	*	Vegetable	B	A	A	6.9	1,257
4	*	*	*	Fodder grasses	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH049

Code Number : KH049 Name of Scheme : Padang Chichak
State : Kedah District : Sik
Type of Scheme : Gravity & Pump
Water source : Sufficient for double cropping
Soil series : 3d(T)

Irrigable area (ha) Main : 51 Off : 51
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Vegetable	B	A	A	6.9	903
2	*	*	*	Coconut	B	-	A		223
				Sago	A	-	A		459
3	*	*	*	Vegetable	B	A	A	6.9	903
4	*	*	*	Fodder grasses	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH050

Code Number : KH050 Name of Scheme : Sg. Cepir
State : Kedah District : Sik
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 2DT

Irrigable area (ha) Main : 118 Off : 118
Trafficability of farm machinery : Good
Paddy planting for last 3 years : Idle

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		1,770
				Groundnut	C	A	A		308
				Vegetable	C	A	-		2,089
2	*	*	*	Durian/Mango	C	A	-	11.0	802
				Guava	C	A	-	3.1	2,832
				Banana	C	A	-	0.7	1,239
				Cashewnut	C	A	A		208
				Papaya	C	A	-		2,950
				Citrus	C	A	-		1,239
				Pineapple	C	A	-	0.5	2,832
				Coconut	A	-	A		517
				Oilpalm	C	A	A	0.9	2,266
				Cocoa	C	A	A	0.6	366
				Rubber	A	A	A	1.1	162
				Coffee	C	A	A		104
				Tea	C	A	A		153
				Clove	C	A	A		37
				Tabacco	C	A	A		1,062
				Sugercane	C	A	A		2,360
				Pepper	C	A	A		348
3	*	*	*	Maize	C	-	-		384
				Sorghum	C	-	A		443
				Ginger	C	A	-		1,770
				Groundnut	C	A	A		308
				Vegetable	C	A	-		2,089
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7									
8	*	*	*		*	*	*		

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH051

Code Number : KH051 Name of Scheme : Gua Ginu
State : Kedah District : Kota Setar
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2t

Irrigable area (ha) Main : 62 Off : 62
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	A	A	-	5.0	930
				Groundnut	A	A	A	0.9	162
				Vegetable	A	A	A	13.8	1,097
2	*	*	*	Durian/Mango	C	A	A	11.0	422
				Guava	C	A	-	3.1	1,488
				Banana	C	A	A	0.7	651
				Cashewnut	A	A	A	8.7	109
				Papaya	A	A	A	1.2	1,550
				Citrus	A	A	A	5.7	651
				Pineapple	A	A	A	9.5	1,488
				Coconut	A	-	A		272
				Oilpalm	C	A	A	0.9	1,190
				Cocoa	C	A	A	0.6	192
				Rubber	A	A	A	1.1	85
				Coffee	A	A	A	0.7	55
				Tea	A	A	A	10.4	81
				Clove	A	A	A	2.3	19
				Tabacco	A	A	A	1.4	558
				Sugarcane	A	A	A	3.3	1,240
				Pepper	A	A	A	16.4	183
3	*	*	*	Maize	A	-	-		202
				Sorghum	A	-	A		233
				Ginger	A	A	-	5.0	930
				Groundnut	A	A	A	0.9	162
				Vegetable	A	A	A	13.8	1,097
4	*	*	*	Fodder grasses	A	-	A		
				Pasture	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH052

Code Number : KH052 Name of Scheme : Nawa Gajah Mati
State : Kedah District : Kota Setar
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2t

Irrigable area (ha) Main : 140 Off : 0
Trafficability of farm machinery : Good
Paddy planting for last 3 years : Idle

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	A	A	-	5.0	2,100
				Groundnut	A	A	A	0.9	365
				Vegetable	A	A	A	13.8	2,478
2	*	*	*	Durian/Mango	C	A	A	11.0	952
				Guava	C	A	-	3.1	3,360
				Banana	C	A	A	0.7	1,470
				Cashewnut	A	A	A	8.7	246
				Papaya	A	A	-	1.2	3,500
				Citrus	A	A	A	5.7	1,470
				Pineapple	A	A	-	9.5	3,360
				Coconut	A	-	A		613
				Oilpalm	C	A	A	0.9	2,688
				Cocoa	C	A	A	0.6	434
				Rubber	A	A	A	1.1	192
				Coffee	A	A	A	0.7	123
				Tea	A	A	A	10.4	182
				Clove	A	A	A	2.3	43
				Tabacco	A	A	A	1.4	1,260
				Sugarcane	A	A	A	3.3	2,800
				Pepper	A	A	A	16.4	413
3	*	*	*	Maize	A	-	-		455
				Sorghum	A	-	A		525
				Ginger	A	A	-	5.0	2,100
				Groundnut	A	A	A	0.9	365
				Vegetable	A	A	A	13.8	2,478
4	*	*	*	Fodder grasses	A	-	A		
				Pasture	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7									
8	*	*	*		*	*	*		

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH053

Code Number : KH053 Name of Scheme : Binjal
State : Kedah District : Kubang Pasu
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2Dt

Irrigable area (ha) Main : 172 Off : 0
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		2,580
				Groundnut	C	A	A		449
				Vegetable	C	A	A		3,044
2	*	*	*	Durian/Mango	C	A	-	11.0	1,170
				Guava	C	A	-	3.1	4,128
				Banana	C	A	A	0.7	1,806
				Cashewnut	C	A	A		303
				Papaya	C	A	-		4,300
				Citrus	C	A	-		1,806
				Pineapple	C	A	-	0.5	4,128
				Coconut	A	-	A		753
				Oilpalm	C	A	A	0.9	3,302
				Cocoa	C	A	A	0.6	533
				Rubber	A	A	A	1.1	236
				Coffee	C	A	A		151
				Tea	C	A	A		224
				Clove	C	A	A		53
				Tabacco	C	A	A		1,548
				Sugarcane	C	A	A		3,440
				Pepper	C	A	A		507
3	*	*	*	Maize	C	-	-		559
				Sorghum	C	-	A		645
				Ginger	C	A	-		2,580
				Groundnut	C	A	A		449
				Vegetable	C	A	A		3,044
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH054

Code Number : KH054 Name of Scheme : Lembah Bata Phase I
State : Kedah District : Kubang Pasu
Type of Scheme : Gravity & Pump
Water source : Sufficient for double cropping
Soil series : 2Dt

Irrigable area (ha) Main : 324 Off : 305
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		4,860
				Groundnut	C	A	A		846
				Vegetable	C	A	-		5,735
2	*	*	*	Durian/Mango	C	A	-	11.0	2,203
				Guava	C	A	-	3.1	7,776
				Banana	C	A	-	0.7	3,402
				Cashewnut	C	A	A		570
				Papaya	C	A	-		8,100
				Citrus	C	A	-		3,402
				Pineapple	C	A	-	0.5	7,776
				Coconut	A	-	A		1,419
				Oilpalm	C	A	A	0.9	6,221
				Cocoa	C	A	A	0.6	1,004
				Rubber	A	A	A	1.1	444
				Coffee	C	A	A		285
				Tea	C	A	A		421
				Clove	C	A	A		100
				Tabacco	C	A	A		2,916
				Sugarcane	C	A	A		6,480
				Pepper	C	A	A		956
3	*	*	*	Maize	C	-	-		1,053
				Sorghum	C	-	A		1,215
				Ginger	C	A	-		4,860
				Groundnut	C	A	A		846
				Vegetable	C	A	-		5,735
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH055

Code Number : KH055 Name of Scheme : Sg. Pering
State : Kedah District : Kubang Pasu
Type of Scheme : Gravity & Pump
Water source : Sufficient for double cropping
Soil series : 2t

Irrigable area (ha) Main : 387 Off : 385
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	A	A	-	5.0	5,805
				Groundnut	A	A	A	0.9	1,010
				Vegetable	A	A	-	13.8	6,850
2	*	*	*	Durian/Mango	C	A	-	11.0	2,632
				Guava	C	A	-	3.1	9,288
				Banana	C	A	-	0.7	4,064
				Cashewnut	A	A	A	8.7	682
				Papaya	A	A	-	1.2	9,675
				Citrus	A	A	-	5.7	4,064
				Pineapple	A	A	-	9.5	9,288
				Coconut	A	-	A		1,695
				Oilpalm	C	A	A	0.9	7,430
				Cocoa	C	A	A	0.6	1,200
				Rubber	A	A	A	1.1	530
				Coffee	A	A	A	0.7	341
				Tea	A	A	A	10.4	504
				Clove	A	A	A	2.3	120
				Tabacco	A	A	A	1.4	3,483
				Sugarcane	A	A	A	3.3	7,740
				Pepper	A	A	A	16.4	1,142
3	*	*	*	Maize	A	-	-		1,256
				Sorghum	A	-	A		1,452
				Ginger	A	A	-	5.0	5,805
				Groundnut	A	A	A	0.9	1,010
				Vegetable	A	A	-	13.8	6,850
4	*	*	*	Fodder grasses	A	-	A		
				Pasture	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH056

Code Number : KH056 Name of Scheme : Che Kedol Putat
State : Kedah District : Kubang Pasu
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 2t

Irrigable area (ha) Main : 320 Off : 320
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	A	A	-	5.0	4,800
				Groundnut	A	A	A	0.9	835
				Vegetable	A	A	-	13.8	5,664
2	*	*	*	Durian/Mango	C	A	-	11.0	2,176
				Guava	C	A	-	3.1	7,680
				Banana	C	A	-	0.7	3,360
				Cashewnut	A	A	A	8.7	563
				Papaya	A	A	-	1.2	8,000
				Citrus	A	A	-	5.7	3,360
				Pineapple	A	A	-	9.5	7,680
				Coconut	A	-	A		1,402
				Oilpalm	C	A	A	0.9	6,144
				Cocoa	C	A	A	0.6	992
				Rubber	A	A	A	1.1	438
				Coffee	A	A	A	0.7	282
				Tea	A	A	A	10.4	416
				Clove	A	A	A	2.3	99
				Tabacco	A	A	A	1.4	2,860
				Sugarcane	A	A	A	3.3	6,400
				Pepper	A	A	A	16.4	944
3	*	*	*	Maize	A	-	-		1,040
				Sorghum	A	-	A		1,200
				Ginger	A	A	-	5.0	4,800
				Groundnut	A	A	A	0.9	835
				Vegetable	A	A	-	13.8	5,664
4	*	*	*	Fodder grasses	A	-	A		
				Pasture	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH057

Code Number : KH057 Name of Scheme : Sg. Gelong
State : Kedah District : Kubang Pasu
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 2Dt

Irrigable area (ha) Main : 194 Off : 194
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		2,910
				Groundnut	C	A	A		506
				Vegetable	C	A	-		3,434
2	*	*	*	Durian/Mango	C	A	-	11.0	1,319
				Guava	C	A	-	3.1	4,656
				Banana	C	A	A	0.7	2,037
				Cashewnut	C	A	A		341
				Papaya	C	A	-		4,850
				Citrus	C	A	-		2,037
				Pineapple	C	A	-	0.5	4,656
				Coconut	A	-	A		850
				Oilpalm	C	A	A	0.9	3,725
				Cocoa	C	A	A	0.6	601
				Rubber	A	A	A	1.1	266
				Coffee	C	A	A		171
				Tea	C	A	A		252
				Clove	C	A	A		60
				Tabacco	C	A	A		1,746
				Sugarcane	C	A	A		3,880
				Pepper	C	A	A		572
3	*	*	*	Maize	C	-	-		631
				Sorghum	C	-	A		728
				Ginger	C	A	-		2,910
				Groundnut	C	A	A		506
				Vegetable	C	A	-		3,434
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH058

Code Number : KH058 Name of Scheme : Lembah Bata II
State : Kedah District : Kubang Pasu
Type of Scheme : Gravity & Pump
Water source : Sufficient for double cropping
Soil series : 2Dt

Irrigable area (ha) Main : 688 Off : 405
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		10,320
				Groundnut	C	A	A		1,796
				Vegetable	C	A	-		12,178
2	*	*	*	Durian/Mango	C	A	-	11.0	4,678
				Guava	C	A	-	3.1	16,512
				Banana	C	A	-	0.7	7,224
				Cashewnut	C	A	A		1,211
				Papaya	C	A	-		17,200
				Citrus	C	A	-		7,224
				Pineapple	C	A	-	0.5	16,512
				Coconut	A	-	A		3,013
				Oilpalm	C	A	A	0.9	13,210
				Cocoa	C	A	A	0.6	2,133
				Rubber	A	A	A	1.1	943
				Coffee	C	A	A		605
				Tea	C	A	A		894
				Clove	C	A	A		213
				Tabacco	C	A	A		6,192
				Sugarcane	C	A	A		13,760
				Pepper	C	A	A		2,030
3	*	*	*	Maize	C	-	-		2,236
				Sorghum	C	-	A		2,580
				Ginger	C	A	-		10,320
				Groundnut	C	A	A		1,796
				Vegetable	C	A	-		12,178
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH059

Code Number : KH059 Name of Scheme : Bdg. Raja Jening
State : Kedah District : Padang Terap
Type of Scheme : Gravity & Pump
Water source : Sufficient for double cropping
Soil series : 2DT

Irrigable area (ha) Main : 117 Off : 117
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		1,755
				Groundnut	C	A	A		305
				Vegetable	C	A	-		2,071
2	*	*	*	Durian/Mango	C	A	-	11.0	796
				Guava	C	A	-	3.1	2,808
				Banana	C	A	-	0.7	1,229
				Cashewnut	C	A	A		206
				Papaya	C	A	-		2,925
				Citrus	C	A	-		1,229
				Pineapple	C	A	-	0.5	2,808
				Coconut	A	-	A		512
				Oilpalm	C	A	A	0.9	2,246
				Cocoa	C	A	A	0.6	363
				Rubber	A	A	A	1.1	160
				Coffee	C	A	A		103
				Tea	C	A	A		152
				Clove	C	A	A		36
				Tabacco	C	A	A		1,053
				Sugercane	C	A	A		2,340
				Pepper	C	A	A		345
3	*	*	*	Maize	C	-	-		380
				Sorghum	C	-	A		439
				Ginger	C	A	-		1,755
				Groundnut	C	A	A		305
				Vegetable	C	A	-		2,071
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH060

Code Number : KH060 Name of Scheme : Charok Kejai
State : Kedah District : Padang Terap
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 3d(T)

Irrigable area (ha) Main : 90 Off : 0
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Vegetable	B	A	-	6.9	1,593
2	*	*	*	Coconut	B	-	A		394
				Sago	A	-	A		810
3	*	*	*	Vegetable	B	A	-	6.9	1,593
4	*	*	*	Fodder grasses	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH061

Code Number : KH061 Name of Scheme : Kurong Hitam
State : Kedah District : Padang Terap
Type of Scheme : Gravity & Pump
Water source : Sufficient for double cropping
Soil series : 2DT

Irrigable area (ha) Main : 100 Off : 100
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		1,500
				Groundnut	C	A	A		261
				Vegetable	C	A	-		1,770
2	*	*	*	Durian/Mango	C	A	-	11.0	680
				Guava	C	A	-	3.1	2,400
				Banana	C	A	-	0.7	1,050
				Cashewnut	C	A	A		176
				Papaya	C	A	-		2,500
				Citrus	C	A	-		1,050
				Pineapple	C	A	-	0.5	2,400
				Coconut	A	-	A		438
				Oilpalm	C	A	A	0.9	1,920
				Cocoa	C	A	A	0.6	310
				Rubber	A	A	A	1.1	137
				Coffee	C	A	A		88
				Tea	C	A	A		130
				Clove	C	A	A		31
				Tabacco	C	A	A		900
				Sugercane	C	A	A		2,000
				Pepper	C	A	A		295
3	*	*	*	Maize	C	-	-		325
				Sorghum	C	-	A		375
				Ginger	C	A	-		1,500
				Groundnut	C	A	A		261
				Vegetable	C	A	-		1,770
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1)..
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH062

Code Number : KH062 Name of Scheme : Pdg. Pusing
State : Kedah District : Pendang
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 2t

Irrigable area (ha) Main : 367 Off : 367
Trafficability of farm machinery : Good
Paddy planting for last 3 years : Idle

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	A	A	-	5.0	5,505
				Groundnut	A	A	A	0.9	958
				Vegetable	A	A	-	13.8	6,496
2	*	*	*	Durian/Mango	C	A	-	11.0	2,496
				Guava	C	A	-	3.1	8,808
				Banana	C	A	-	0.7	3,854
				Cashewnut	A	A	A	8.7	646
				Papaya	A	A	-	1.2	9,175
				Citrus	A	A	-	5.7	3,854
				Pineapple	A	A	-	9.5	8,808
				Coconut	A	-	A		1,607
				Oilpalm	C	A	A	0.9	7,046
				Cocoa	C	A	A	0.6	1,138
				Rubber	A	A	A	1.1	503
				Coffee	A	A	A	0.7	323
				Tea	A	A	A	10.4	477
				Clove	A	A	A	2.3	114
				Tabacco	A	A	A	1.4	3,303
				Sugarcane	A	A	A	3.3	7,340
				Pepper	A	A	A	16.4	1,083
3	*	*	*	Maize	A	-	-		1,193
				Sorghum	A	-	A		1,376
				Ginger	A	A	-	5.0	5,505
				Groundnut	A	A	A	0.9	958
				Vegetable	A	A	-	13.8	6,496
4	*	*	*	Fodder grasses	A	-	A		
				Pasture	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7									
8	*	*	*		*	*	*		

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH063

Code Number : KH063 Name of Scheme : Paya Rawa I
State : Kedah District : Pendang
Type of Scheme : Pump
Water source : Sufficient for double cropping
Soil series : 2t

Irrigable area (ha) Main : 111 Off : 111
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	A	A	-	5.0	1,665
				Groundnut	A	A	A	0.9	290
				Vegetable	A	A	A	13.8	1,965
2	*	*	*	Durian/Mango	C	A	-	11.0	755
				Guava	C	A	-	3.1	2,664
				Banana	C	A	-	0.7	1,166
				Cashewnut	A	A	A	8.7	195
				Papaya	A	A	-	1.2	2,775
				Citrus	A	A	-	5.7	1,166
				Pineapple	A	A	-	9.5	2,664
				Coconut	A	-	A		486
				Oilpalm	C	A	A	0.9	2,131
				Cocoa	C	A	A	0.6	344
				Rubber	A	A	A	1.1	152
				Coffee	A	A	A	0.7	98
				Tea	A	A	A	10.4	144
				Clove	A	A	A	2.3	34
				Tabacco	A	A	A	1.4	999
				Sugarcane	A	A	A	3.3	2,220
				Pepper	A	A	A	16.4	327
3	*	*	*	Maize	A	-	-		361
				Sorghum	A	-	A		416
				Ginger	A	A	-	5.0	1,665
				Groundnut	A	A	A	0.9	290
				Vegetable	A	A	A	13.8	1,965
4	*	*	*	Fodder grasses	A	-	A		
				Pasture	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, *profitability, marketability and invest performance (B/C > 1).*
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
\- : Not suitable

Crop Diversification Potential for KH064

Code Number : KH064 Name of Scheme : Pdg.Kerbau Ph I dan II Pendang
State : Kedah District : Pendang
Type of Scheme : Pump
Water source : Limited to single cropping
Soil series : 2Dt

Irrigable area (ha) Main : 551 Off : 447
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		8,265
				Groundnut	C	A	A		1,438
				Vegetable	C	A	-		9,753
2	*	*	*	Durian/Mango	C	A	-	11.0	3,747
				Guava	C	A	-	3.1	13,224
				Banana	C	A	-	0.7	5,786
				Cashewnut	C	A	A		970
				Papaya	C	A	-		13,775
				Citrus	C	A	-		5,786
				Pineapple	C	A	-	0.5	13,224
				Coconut	A	-	A		2,413
				Oilpalm	C	A	A	0.9	10,579
				Cocoa	C	A	A	0.6	1,708
				Rubber	A	A	A	1.1	755
				Coffee	C	A	A		485
				Tea	C	A	A		716
				Clove	C	A	A		171
				Tabacco	C	A	A		4,959
				Sugarcane	C	A	A		11,020
				Pepper	C	A	A		1,625
3	*	*	*	Maize	C	-	-		1,791
				Sorghum	C	-	A		2,066
				Ginger	C	A	-		8,265
				Groundnut	C	A	A		1,438
				Vegetable	C	A	-		9,753
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5									
6									
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH065

Code Number : KH065 Name of Scheme : Lampam Rambai
State : Kedah District : Kota Setar
Type of Scheme : Gravity & Pump
Water source : Sufficient for double cropping
Soil series : 2Dt

Irrigable area (ha) Main : 223 Off : 194
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		3,345
				Groundnut	C	A	A		582
				Vegetable	C	A	A		3,947
2	*	*	*	Durian/Mango	C	A	-	11.0	1,516
				Guava	C	A	-	3.1	5,352
				Banana	C	A	A	0.7	2,342
				Cashewnut	C	A	A		392
				Papaya	C	A	-		5,575
				Citrus	C	A	A		2,342
				Pineapple	C	A	-	0.5	5,352
				Coconut	A	-	A		977
				Oilpalm	C	A	A	0.9	4,282
				Cocoa	C	A	A	0.6	691
				Rubber	A	A	A	1.1	306
				Coffee	C	A	A		196
				Tea	C	A	A		290
				Clove	C	A	A		69
				Tabacco	C	A	A		2,007
				Sugarcane	C	A	A		4,460
				Pepper	C	A	A		658
3	*	*	*	Maize	C	-	-		725
				Sorghum	C	-	A		836
				Ginger	C	A	-		3,345
				Groundnut	C	A	A		582
				Vegetable	C	A	A		3,947
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*						
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH066

Code Number : KH066 Name of Scheme : Kg. Ruat
State : Kedah District : Yan
Type of Scheme : Gravity & Pump
Water source : Sufficient for double cropping
Soil series : 2dt

Irrigable area (ha) Main : 26 Off : 26
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	B	A	-	2.5	390
				Groundnut	A	A	A	0.9	68
				Vegetable	A	A	A	13.8	460
2	*	*	*	Durian/Mango	C	A	A	11.0	177
				Guava	C	A	-	3.1	624
				Banana	C	A	A	0.7	273
				Cashewnut	A	A	A	8.7	46
				Papaya	B	A	-	0.6	650
				Citrus	B	A	-	2.9	273
				Pineapple	A	A	-	9.5	624
				Coconut	A	-	A		114
				Oilpalm	C	A	A	0.9	499
				Cocoa	C	A	A	0.6	81
				Rubber	B	A	A	0.6	36
				Sago	C	-	A		234
				Coffee	A	A	A	0.7	23
				Tea	A	A	A	10.4	34
				Clove	B	A	A	1.1	8
				Tabacco	B	A	A	0.7	234
				Sugarcane	A	A	A	3.3	520
				Pepper	A	A	A	16.4	77
3	*	*	*	Maize	A	-	-		85
				Sorghum	A	-	A		98
				Ginger	B	A	-	2.5	390
				Groundnut	A	A	A	0.9	68
				Vegetable	A	A	A	13.8	460
4	*	*	*	Fodder grasses	A	-	A		
				Pasture	A	-	A		
5	*	*	*			A	A	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
\- : Not suitable

Crop Diversification Potential for KH067

Code Number : KH067 Name of Scheme : Sinkir Darat/Laut,Sg.Pial,Pdg.
State : Kedah District : Yan
Type of Scheme : Gravity
Water source : Limited to single cropping
Soil series : 2d

Irrigable area (ha) Main : 290 Off : 160
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Groundnut	A	A	A	0.9	756
				Vegetable	A	A	-	13.8	5,133
2	*	*	*	Durian/Mango	A	A	-	43.6	1,972
				Guava	A	A	-	12.2	6,960
				Banana	A	A	-	2.7	3,046
				Cashewnut	A	A	A	8.7	510
				Citrus	B	A	-	2.9	3,046
				Pineapple	A	A	-	9.5	6,960
				Coconut	A	-	A		1,271
				Oilpalm	A	A	A	3.6	5,568
				Cocoa	A	A	A	2.2	899
				Rubber	B	A	A	0.6	398
				Coffee	B	A	A	0.4	255
				Tea	A	A	A	10.4	377
				Clove	B	A	A	1.1	90
				Tabacco	B	A	A	0.7	2,610
				Sugarcane	A	A	A	3.3	5,800
				Pepper	A	A	A	16.4	855
3	*	*	*	Maize	A	-	-		943
				Sorghum	A	-	A		1,087
				Groundnut	A	A	A	0.9	756
				Vegetable	A	A	-	13.8	5,133
4	*	*	*	Fodder grasses	A	-	A		
				Pasture	A	-	A		
5									
6									
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH068

Code Number : KH068 Name of Scheme : Bakar Bata
State : Kedah District : Yan
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2dt

Irrigable area (ha) Main : 40 Off : 40
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	B	A	-	2.5	600
				Groundnut	A	A	A	0.9	104
				Vegetable	A	A	A	13.8	708
2	*	*	*	Durian/Mango	C	A	A	11.0	272
				Guava	C	A	-	3.1	960
				Banana	C	A	A	0.7	420
				Cashewnut	A	A	A	8.7	70
				Papaya	B	A	-	0.6	1,000
				Citrus	B	A	-	2.9	420
				Pineapple	A	A	-	9.5	960
				Coconut	A	-	A		175
				Oilpalm	C	A	A	0.9	768
				Cocoa	C	A	A	0.6	124
				Rubber	B	A	A	0.6	55
				Sago	C	-	A		360
				Coffee	A	A	A	0.7	35
				Tea	A	A	A	10.4	52
				Clove	B	A	A	1.1	12
				Tabacco	B	A	A	0.7	360
				Sugarcane	A	A	A	3.3	800
				Pepper	A	A	A	16.4	118
3	*	*	*	Maize	A	-	-		130
				Sorghum	A	-	A		150
				Ginger	B	A	-	2.5	600
				Groundnut	A	A	A	0.9	104
				Vegetable	A	A	A	13.8	708
4	*	*	*	Fodder grasses	A	-	A		
				Pasture	A	-	A		
5	*	*	*			A	A	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH069

Code Number : KH069 Name of Scheme : Bakong Lubok Boi
State : Kedah District : Yan
Type of Scheme : Gravity
Water source : Sufficient for double cropping
Soil series : 2dt

Irrigable area (ha) Main : 440 Off : 440
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	B	A	-	2.5	6,600
				Groundnut	A	A	A	0.9	1,148
				Vegetable	A	A	-	13.8	7,788
2	*	*	*	Durian/Mango	C	A	-	11.0	2,992
				Guava	C	A	-	3.1	10,560
				Banana	C	A	-	0.7	4,620
				Cashewnut	A	A	A	8.7	774
				Papaya	B	A	-	0.6	11,000
				Citrus	B	A	-	2.9	4,620
				Pineapple	A	A	-	9.5	10,560
				Coconut	A	-	A		1,927
				Oilpalm	C	A	A	0.9	8,448
				Cocoa	C	A	A	0.6	1,364
				Rubber	B	A	A	0.6	603
				Sago	C	-	A		3,960
				Coffee	A	A	A	0.7	387
				Tea	A	A	A	10.4	572
				Clove	B	A	A	1.1	136
				Tabacco	B	A	A	0.7	3,960
				Sugarcane	A	A	A	3.3	8,800
				Pepper	A	A	A	16.4	1,298
3	*	*	*	Maize	A	-	-		1,430
				Sorghum	A	-	A		1,650
				Ginger	B	A	-	2.5	6,600
				Groundnut	A	A	A	0.9	1,148
				Vegetable	A	A	-	13.8	7,788
4	*	*	*	Fodder grasses	A	-	A		
				Pasture	A	-	A		
5	*	*	*			A	-	2.0	
6	*	*	*		A	A	A		
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable

Crop Diversification Potential for KH070

Code Number : KH070 Name of Scheme : Pdg. Gaung
State : Kedah District : Langkawi
Type of Scheme : Gravity & Pump
Water source : Limited to single cropping
Soil series : 2Dt

Irrigable area (ha) Main : 350 Off : 0
Trafficability of farm machinery : Good
Paddy planting for last 3 years : More than 50% of irrigable area

Category	Step 1	Step 2	Step 3		Step 4	Step 5	Step 6	Step 7 (B/C)	Production (ton)
1	*	*	*	Ginger	C	A	-		5,250
				Groundnut	C	A	A		914
				Vegetable	C	A	-		6,195
2	*	*	*	Durian/Mango	C	A	-	11.0	2,380
				Guava	C	A	-	3.1	8,400
				Banana	C	A	-	0.7	3,675
				Cashewnut	C	A	A		616
				Papaya	C	A	-		8,750
				Citrus	C	A	-		3,675
				Pineapple	C	A	-	0.5	8,400
				Coconut	A	-	A		1,533
				Oilpalm	C	A	A	0.9	6,720
				Cocoa	C	A	A	0.6	1,085
				Rubber	A	A	A	1.1	480
				Coffee	C	A	A		308
				Tea	C	A	A		455
				Clove	C	A	A		109
				Tabacco	C	A	A		3,150
				Sugarcane	C	A	A		7,000
				Pepper	C	A	A		1,033
3	*	*	*	Maize	C	-	-		1,138
				Sorghum	C	-	A		1,313
				Ginger	C	A	-		5,250
				Groundnut	C	A	A		914
				Vegetable	C	A	-		6,195
4	*	*	*	Fodder grasses	C	-	A		
				Pasture	C	-	A		
5									
6									
7	*	*	*		*	*	*		
8									

NOTE Underline : Crops with highest potential (Class A) in terms of crop suitability, profitability, marketability and invest performance (B/C > 1).
* : Potential categories
A : Suitable
B : Marginal suitable due to lack of drainage facilities
C : Marginal suitable due to limited factors other than drainage conditions
- : Not suitable