

インドネシア共和国  
マレーシア国

インドネシア共和国 オガン・コメリン川下流域総合農業開発計画  
西ランボン地区及びスマンカ河流域灌漑開発計画

マレーシア国 園芸作物流通システム改善計画

## プロジェクトファイナディング調査報告書

平成5年12月

社団法人 海外農業開発コンサルタンツ協会



PROJECT AREA

KABUPATEN MUSI BANYUASIN



KABUPATEN MUARA ENIM

**LEGEND**

- Provincial Capital
- ① Kabupaten Capital
- Kecamatan Capital
- - - Unused Swamp Area
- Lebak Area
- - - Upper Komering Irrigation Schemes
- Lower Komering Irrigation Schemes
- ===== Eastern Sumatra Highway

0 25 Km  
SCALE

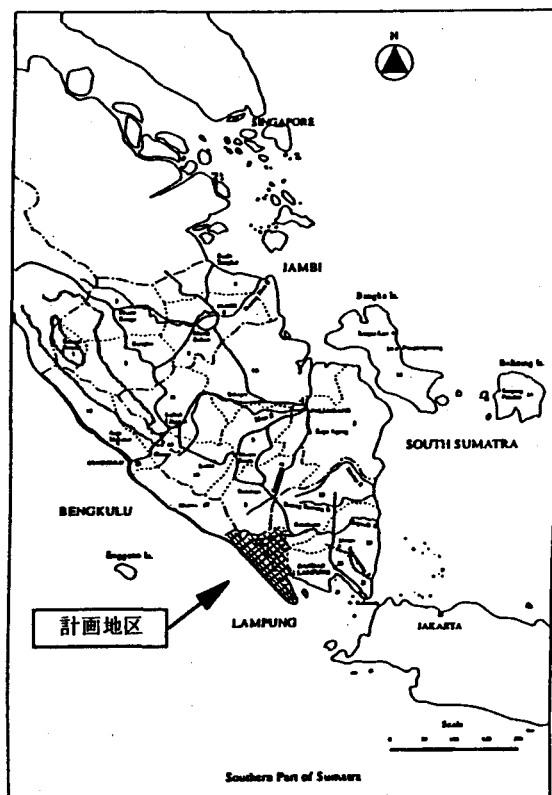
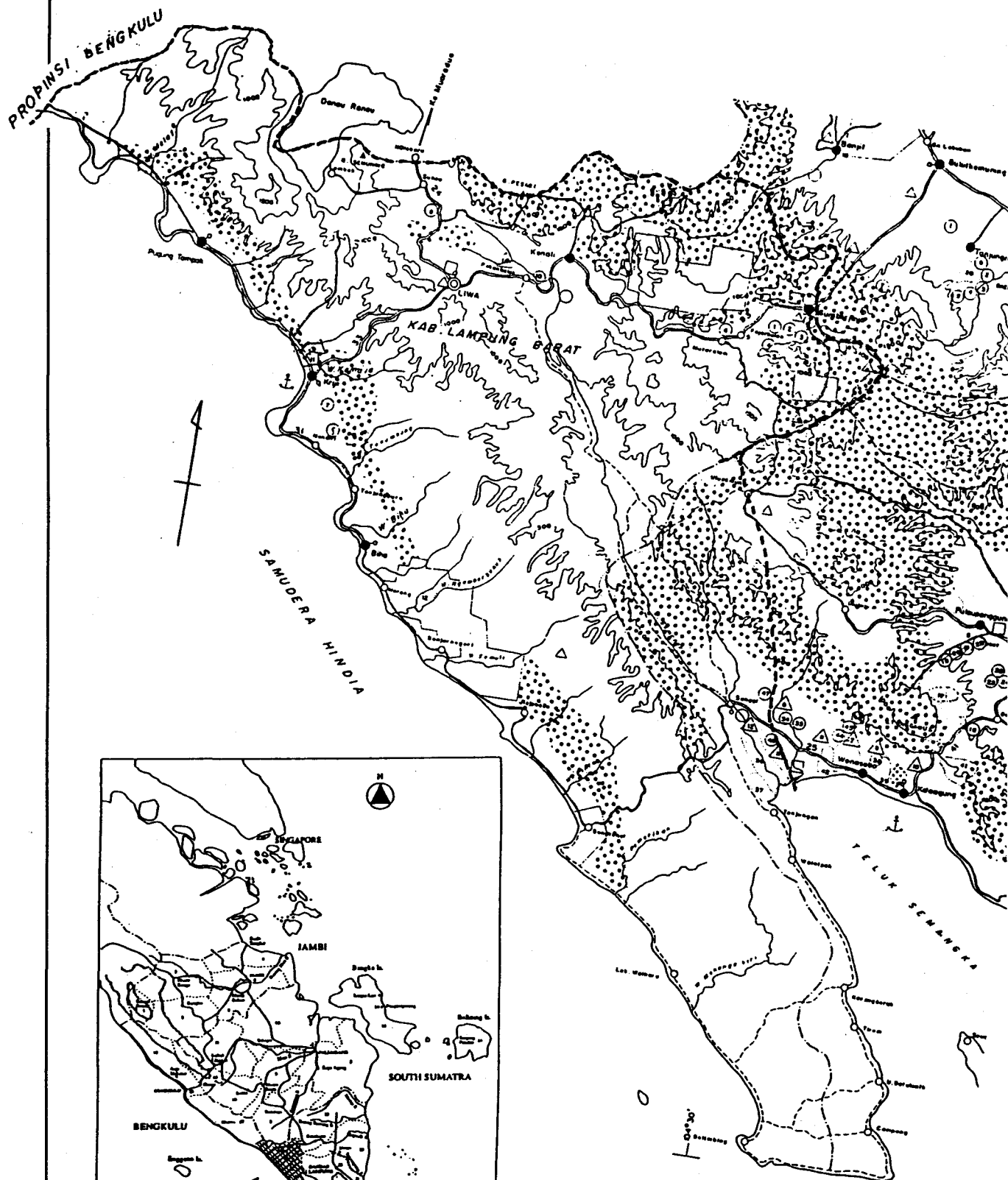
KABUPATEN  
OGAN KOMERING ULU

KABUPATEN  
OGAN KOMERING IRIL

インドネシア国

オガン・コメリン川下流域  
総合農業開発計画

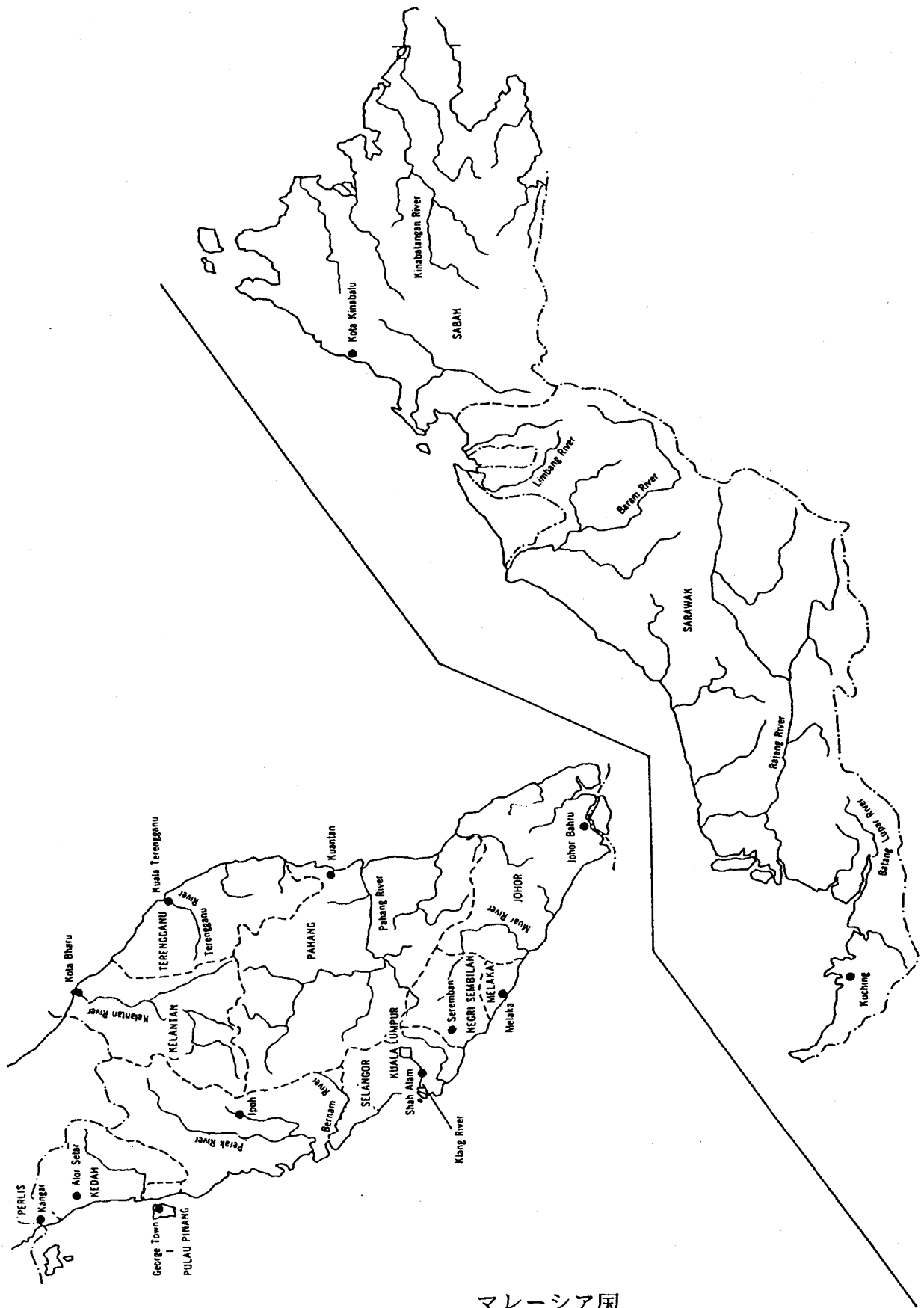
位置図



インドネシア国

西ランポン地区及び  
スマンカ川流域灌漑開発計画

位置図



マレーシア国

園芸作物流通システム改善計画

農業流通庁 (FAMA) 州事務所 位置図

## 要 約

### 1. オガン・コメリン川下流域総合農業開発計画 (インドネシア共和国)

#### 計画の背景

コメリン川下流域の農業開発ポテンシャルは、1979年にJICAが実施した"Comprehensive Study on the Upper Komering River Basin Development"において予備的に検討された。その後、1989年にEECにより実施された"Musi River Basin Study (Master Plan)"の中で、本地域における農業開発計画が灌漑開発を柱として提言されている。

南スマトラ州の州都パレンバンに広がる本計画地区の農業開発は、(1)州計画の農業および農村工業の開発拠点、(2)コメリン上流域の大規模灌漑開発計画とのバランス維持、(3)地区内から州都パレンバンへの人口流出の軽減、(4)米の自給維持の国家政策としての米の生産基地等の理由から重要と考えられる。

#### 計画の概要

本計画の目的は、オガン・コメリン川下流域の土地および水資源の最適利用に基づく総合農業開発計画を実施し、農業生産ポテンシャルの最大化をはかると共に、本地区の後進性を打開しようとするものである。

総合農業開発計画の調査内容は下記の通りである。

- (1) 関連する過去の調査結果のレビュー。
- (2) プランテーションの新規開発にも焦点を当てた土地利用計画の策定。
- (3) 先行計画との整合性を保った水資源開発計画の策定。
- (4) 東部スマトラハイウェイを利用した市場戦略を含む市場流通計画の策定。
- (5) 新規有望作物導入の可能性を検討した栽培・営農計画の策定。
- (6) 農村工業強化の可能性を検討した農村工業計画の策定。
- (7) 開発がパレンバンに与える影響を評価する環境影響調査、等。

総合農業開発計画策定後、明かになった優位計画に対してF/Sを実施する。

## 2. 西ランボン地区およびスマンカ川流域灌漑開発計画 (インドネシア共和国)

### 計画の背景

ランボン州において農業部門は、州のGRDPの42%を1990年において占めており、農業生産ポテンシャルがランボン州は高い。しかしながら、本計画の対象地域である西ランボン地区およびスマンカ川流域は、交通の便の悪さもあり、ランボン州のなかでも開発に取り残されている地域である。したがって、本地域における農業インフラ、特に灌漑農業開発を柱とした開発を行ない農業生産性を高め、農家経済の改善をはかると共に、州内の地域間格差を是正することを主眼とする本調査実施の重要性が州および中央政府により認識されるに至った。しかしながら、本計画の策定に当たっては、本地域の州内での位置づけ、本計画の国家あるいは州開発計画の枠組みのなかでの策定、水および土地資源の農業への総合的利用計画策定の必要性などから、公共事業省水資源総局は、日本政府の技術協力を得て調査を進めたいと強く希望している。

### 計画の概要

本計画の目的は、西ランボン地区およびスマンカ川流域の土地・水資源開発の最適利用をベースに灌漑施設および農地の整備を行なうものである。これにより、農業生産性を高め、国家政策に基づく、地域間格差の是正、貧困の撲滅、食用作物の安定的供給を達成するものである。

西ランボン地区では、同地区の土地および水資源の開発ポテンシャルを明かにした後、州政府の持つ合計22,000 haの中・小規模灌漑整備計画のレビューを行なう。さらに、個々の計画の開発優先順位付けをランボン州および西ランボン県の社会的、経済的必要性等に基づいて行なう。その後、選ばれた優先計画に対してF/Sを実施する。

スマンカ川流域も同様に土地および水資源の最適利用を柱とする既存灌漑施設の改修、拡張計画を中心とした灌漑整備計画を州および県の開発戦略の枠組みになかで行なう。ダム建設の可能性、新規頭首工建設の可能性等の比較検討も行ない開発の基本構想をまとめる。その後、改修、拡張計画を中心にF/Sを行なう。

### 3. 園芸作物流通システム改善計画（マレーシア国）

#### 計画の背景

新国家農業政策（1992 - 2010年）において強調されている農工間の調和のとれた経済成長達成のためには、農業生産の多様化促進を継続することが不可欠である。しかしながら、従来の農業政策が生産技術面の改良に依存してきたため、生産者の収入増を確保し、農業部門の平均成長率3.5%を大幅に上回る成長を達成するには、生産物の付加価値を高める必要がある。その手段として流通・販売面の合理化・近代化と加工面の強化が今後緊急に推進すべき課題となっている。

1965年に農業省の外局として設立された連邦農業流通庁（FAMA）は、マレーシア政府の政策方針を踏まえ、農業生産者の経営自立及び多様化する消費者需要へ適切に対応するために、FAMAが関与する産品を中心とした流通システムの将来像確立と行政機構の関与すべき分野及びその機能の再検討に関する調査実施を決定した。

FAMAはこの調査の内容が多岐にわたりかつ客観的判断を要する検討項目が多数含まれていることを考慮し、日本政府の技術協力を得て調査を進めたいと強く希望している。

#### 計画の概要

本計画の短期的目標は、供給・需要・流通ネットワークを統合したFAMAの関与する農産品流通システムの整備・改善に係る実施計画を策定することにある

調査は、FAMAの活動が半島マレーシアおよびサバ、サラワクにまたがるため、マレーシア全国を対象に行なう。本計画の短期的目標の早急な実現のため、市場流通インフラの近代化及び関連企業・業者の開発を意図する流通システム整備・改善パイロット事業を実施し、これをモデルとしてFAMAの関与する農産品の内、野菜、果実および花卉の流通システム改善を行なう。同時に、FAMAの流通システム改善における役割及び機能の評価・分析も行なう。

インドネシア共和国： オガン・コメリン川下流域総合農業開発計画  
西ランボン地区及びスマンカ河流域灌漑開発計画

マレーシア国： 園芸作物流通システム改善計画

## プロジェクトファインディング調査報告書

### 目次

#### 位置図

1.	序言 .....	1
2.	インドネシア共和国 .....	2
2.1	背景 .....	2
2.1.1	インドネシア共和国の社会・経済現況 .....	2
2.1.2	農業部門の現況および開発目標 .....	2
2.2	オガン・コメリン川下流域総合農業開発計画 .....	3
2.2.1	計画の背景 .....	3
2.2.2	計画地区の概要 .....	3
2.2.3	計画の概要 .....	5
2.2.4	相手国政府の意向 .....	5
2.3	西ランボン地区およびスマンカ河流域灌漑開発計画 .....	7
2.3.1	計画の背景 .....	7
2.3.2	計画地区の概要 .....	7
2.3.3	計画の概要 .....	8
2.3.4	相手国政府の意向 .....	9
3.	マレーシア国 .....	
3.1	背景 .....	
3.1.1	マレーシアの社会・経済現況 .....	10
3.1.2	新国家農業政策および第6次5か年計画 .....	11
3.1.3	農業セクターの現況 .....	12



3.2	園芸作物流通システム改善計画 .....	13
3.2.1	経緯・背景 .....	13
3.2.2	計画の概要 .....	13
3.2.3	計画概要 .....	13
3.2.4	総合所見 .....	14

## 添付資料

添付資料 - 1	インドネシア共和国 オガン・コメリン川下流域総合農業開発計画調査 実施のためのTOR (案) Ogan-Lower Komering River Basin Integrated Agricultural Development Plan Study
添付資料 - 2	インドネシア共和国 西ランボン地区及びスマンカ川流域灌漑開発計画 オーバーオールスタディ実施のためのTOR (案) Overall Plan Study on West Lampung and Semangka River Basin Irrigation Development Project
添付資料 - 3	マレーシア国 園芸作物流通システム改善計画調査実施のためのTOR (案) Feasibility Study on Improvement and Development of Horticulture Marketing System in Malaysia
添付資料 - 4	マレーシア国 園芸作物・畜産生産物流通システム改善計画調査実施のためのTOR (FAMAの原案) Feasibility Study on Marketing System Improvement and Development for Fresh and Processed Horticulture and Livestock Products in Malaysia
添付資料 - 5	5.1 ADCA ミッションの調査工程 5.2 面会者リスト 5.3 収集資料一覧
添付資料 - 6	現地写真集

## 1. 序 言

本報告書は、1993年11月4日より同年11月17日までの14日間にわたってインドネシア共和国及びマレーシア国において実施した、以下に示す3件の計画に関するプロジェクトファインディング調査結果を取りまとめたものである。

### インドネシア共和国

- 1) オガン・コメリン川下流域総合農業開発計画
- 2) 西ランボン地区およびスマンカ川流域灌漑開発計画

### マレーシア国

- 3) 園芸作物流通システム改善計画

プロジェクトファインディング調査は、社団法人海外農業開発コンサルタント協会（ADCA）から派遣された下記2名の団員により実施された。

団長／灌漑計画 遠矢 勇作 （日本工営株式会社）  
農業／農業経済 石塚 真 （日本工営株式会社）

調査団は、インドネシア共和国及びマレーシア国における現地調査及び資料収集において、両国政府関係機関のご協力を頂き業務を円滑に遂行することができた。調査団の受け入れ窓口としてご協力頂いたのは、インドネシア共和国では公共事業省水資源局であり、マレーシア国では農業省連邦農業流通庁である。また在インドネシア共和国日本大使館、JICA事務所並びに、在マレーシア国日本大使館、JICA事務所関係者の方々に多大なる助言とご協力を頂いた。ここに関係各位の方々に深甚なる感謝の意を表する次第である。

調査団の調査日程、面会者のリストは、添付資料-1と2に示すとおりである。

## 2. インドネシア共和国

### 2.1 背景

#### 2.1.1 インドネシア共和国の社会・経済現況

インドネシアの総人口は1990年現在17,900万人で、1980年から1990年までの年平均増加率は1.98%である。島別に人口の分布を見れば、国土面積の僅か6.9%しか占めていないジャワ島に全人口の60%に当たる10,750万人が住んでおり、次いでスマトラで全人口の20%に当たる3,640万人が住んでいる。人口密度は全国平均で1990年において93人/km<sup>2</sup>であり、ジャワが813人/km<sup>2</sup>と突出しており、スマトラでは77人/km<sup>2</sup>となっている。この人口の地域的な偏りは投資の不均衡並びに開発水準にも格差を生じさせている。

インドネシアの土地利用は非常に高い森林割合で特徴付けられ、国土面積の70%に当たる130万km<sup>2</sup>が森林に区分されている。水田面積は全体の4.4%に当たる84,000km<sup>2</sup>を占め、その内43%がジャワ島に集中しており、スマトラが27%でこれに次ぐ。耕作可能な畑地およびプランテーションは全面積の13%、250,000km<sup>2</sup>を占め、この41%がスマトラにある。

インドネシアの経済は、1969年に第1次開発5ヵ年計画を開始して以来着実に成長し、1969年から1989年までの年平均成長率は7%前後であった。1989年における国内総生産（GDP）は、1983年固定価格表示で104兆ルピアとなっている。

#### 2.1.2 農業部門の現況および開発目標

インドネシア経済において農業は主要部門であり、GDPの21%は農業部門によるものである。また農業部門は全労働人口のおよそ55%を雇用し、非石油品輸出の56%を占めている。農業部門の内、最も重要なサブセクターは食用作物でこれは農業GDPの52%を占めている。このうち、インドネシアの主食である米が突出しており、米だけで農業GDPの約30%を占めている。

現在実施中の第5次開発5ヵ年計画（Repelita V; 1989 - 1994年）では、農業部門は経済成長の牽引者として積極的な役割が期待されており、その開発目標を i) 食用作物の品質向上と自給の安定化、ii) 家畜飼料および漁業養殖を目的とした農産物生産の増大、iii) 農家の生産性向上と農産物の付加価値向上、iv) 農家所得の向上、v) 地域開発の促進と自然資源（環境）の保全、においている。このうち、i) に関連して、米の自給維持が最重要課題の一つとなっている。インドネシアでは1984年以来米をほぼ自給しているが、これは増大する需要に応じた米の生産増への努力がなされてきた結果であり、灌漑開発はこの課題を達成するために今後も主要な役割を果たすものと期待されている。

また、昨年（1993年）に策定された第6次開発5ヵ年計画（Repelita VI; 1994 - 1999年）の食用作物分野の目標として、i) 自給を確立した食料の自給維持、ii) 農家所得の向上、iii) 作物多様化による栄養水準の向上、iv) 農業生産性の向上、農地の拡大および畑地、菜園、湿地利用の増加による食用作物の増産、v) このための科学技術の利用、基盤整備、効率的な収穫後処理および適切な価格政策の充実による側面的支援、を掲げている。i) にもあるように、米を中心とする食用作物の自給維持は、今後の政策においても重要な位置を占めることとなる。

## 2.2 オガン・コメリン川下流域総合農業開発計画

### 2.2.1 計画の背景

コメリン川下流域の農業開発ポテンシャルは、1979年にJICAが実施した"Comprehensive Study on the Upper Komering River Basin Development"において予備的に検討された。その後、1989年にEECにより実施された"Musi River Basin Study (Master Plan)"の中で、本地域における農業開発計画が灌漑開発を柱として提言されている。

南スマトラ州の州都パレンバンに広がる本計画地区の農業開発の重要性は次の点において明かにすることができる。

- 1) 本地区は州都パレンバンの背後地として、さらに、現在計画中の東部スマトラハイウェイ (Eastern Sumatora Highway) との関係から、州開発計画の中で農業および農村工業の開発拠点として位置付けられている。東部スマトラハイウェイは、Bandar Lampung - Palembang - Jambi - Riau - Medan を結ぶもので、これが実現した暁には本地区の農業生産物の市場性は著しく高まるものと期待されている。
- 2) 本地区は、州内の後進地域として位置付けられており、後述するようにOKI 県の人口一人当たりのGRDPは、州全体の平均より 20% 程度低いものとなっている。さらに、コメリン上流域の大規模灌漑開発計画とのバランスをとる意味合いから、下流域における農業開発の必要性・重要性が近年急速に高まってきている。
- 3) 本地区が後進地区であることと関連して、地区内から州都パレンバンへの人口流出が社会問題化している。流出した人口によるパレンバン市におけるスラムの拡大は、市の開発において多大な悪影響を与えている。
- 4) 米の自給維持はインドネシア国政府の根幹をなすもので、南スマトラ州は米生産基地としての役割を担う州の一つである。こうした国家政策の基、州政府はコメリン川上流域および下流域を米の生産基地としても位置付けている。

### 2.2.2 計画地区の概要

#### (1) 位置

本計画地区は南スマトラ州の州都パレンバンの南に広がる準平原、湿地及びムシ・オガン・コメリン河による沖積台地で、行政区分図ではOKI (ogan Komering Iri) 県の8郡およびOKU (Ogan Komering Ulu) 県の1郡によってカバーされている (位置図参照)。

#### (2) 気象・水文

南スマトラ州の気候は典型的な熱帯モンスーン気候に属し、雨季と乾季の2季を持つ。年平均降水量は、東部海岸地域で約2,000mm、西部山岳地域 (Lahat) で約3,500mmとなっている。平野部の日平均気温は年間を通じて変動が小さく約28° Cである。

コメリン及びオガン川は南スマトラ州を東西によこぎるムシ河の主要な支流である。両河川とも州の南西に横たわる山地に源を発し州都パレンバンでムシ河に合流する。コメリン川の流域面積は 9,908 Km<sup>2</sup>、オガン川は 8,233 Km<sup>2</sup> である。Musi River Basin Study (1989年) による両河川の年平均流量は図-2.2.1に示すとおりである。

### (3) 土壌及び土地分級

地区の土壌及び土地分級調査は、1979年のJICAによるComprehensive Study on the Upper Komering River Basin Development で予備的に実施されている。これによれば、地区の土壌は、オガン及びコメリン河下流地区に主に広がる Alluvial Soils、コメリン河下流右岸地区の低地に広がる Gley soils、及びコメリン河中流域右岸地区に広がる Podzolic soils に大別される。さらに地区の土地分級の結果によれば、その大部分は水稻作及び畑作に適するかあるいは条件付きで適すると評価されており、湛水や土壌を原因とする不適地は地区の10-20%程度である。

### (4) 社会条件

本計画地区に関係するOKI県、OKU県および南スマトラ州全体の1990年における人口、GRDP等の指標は次のとおりである。

	面積 (Km <sup>2</sup> )	人口 (1,000)	人口密度 (人/Km <sup>2</sup> )	GRDP (Rp.billion)	GRDP per Capita (Rp.1,000)
OKI県	21,638	771	35.6	276	358
OKU県	10,408	964	92.6	324	336
南スマトラ	217,836	15,468	71.0	7,151	462

上表で明かなように、OKI県の一人当たりのGRDPは州の平均の約77%、OKU県で73%となっている。こうしたことから、近年パレンバン市におけるスラム拡大が問題となっているわけで、本計画地区の農業開発を通じた人口流出阻止は強く望まれている。

### (5) 農業

本地区の土地利用状況は、Musi River Basin Study によれば、次のとおりである。

	面積 (1,000 ha)	(%) *
1. 森林または非農地	1,385	
2. 農地	433	100.0
2.1 家庭菜園・樹園	18	4.2
2.2 Dry Land		
- 食用作物	67	15.5
- プランテーション	193	44.6
2.3 Wet Land		
- 灌漑水田	37	8.5
- 天水田	20	4.6
2.4 湿地		
- Inland	81	18.7

- Tidal	17	3.9
合計	1,818	

\*: 農地 = 100%

本地区の主要な農業生産物は、ゴム、オイルパームといったプランテーション作物であり、ついで湿地、灌漑水田、天水田等における稲作である。農業基盤整備の著しい遅れから本地区の米（粳）の単位収量は3.15ton/haと低く、全国平均の76%にとどまっている。

### 2.2.3 計画概要

#### (1) 計画の目的

本計画の目的は、オガン・コメリン川下流域の土地および水資源の最適利用に基づく総合農業開発計画を実施し、農業生産ポテンシャルの最大化をはかると共に、本地区の後進性を打開しようとするものである。

#### (2) 総合農業開発計画

土地と水資源の農業への最適利用をはかるため、関連する過去の調査結果のレビューを行なう。土地資源の開発に当たっては、灌漑水田のみならずプランテーションの新規開発にも焦点を当てる必要がある。水資源については、オガン・コメリン川上流域の先行計画との整合性を保つため、流域全体で見直しを行なう必要がある。農業開発計画においては、域内農業生産物の東部スマトラハイウェイを利用した市場戦略、新規有望作物導入の可能性、農村工業強化の可能性、それらを支援する体制の在り方等を明かにする必要がある。また、内陸漁業の強化・開発にも焦点を当てる必要がある。さらに、開発がバレンバンに与える影響も環境影響調査と合わせて行なう必要がある。こうした検討結果に基づき、土地利用計画、水資源開発計画、灌漑排水計画、洪水防御計画、栽培・営農計画、農村基盤整備計画、農村工業計画、市場流通計画等からなる総合農業開発計画を策定する。

ついで総合農業開発計画で明かになった優位計画に対してF/Sを実施する。優位計画の特定に当たっては、Musli River Basin Study (1989年) で計画された灌漑開発計画、排水改善計画に十分留意する必要がある。

### 2.2.4 相手国政府の意向

本計画地区の農業開発は一部の大規模プランテーションを除けば殆ど手付かずの状態であり、農村の貧困に起因する人口流出はバレンバン市でのスラム拡大につながり社会問題にもなっている。さらには、上流域での大規模灌漑開発計画が進行中でもあり、開発の平等化といった観点からも中央および州政府は本計画調査の早急なる実現を望んでいる。

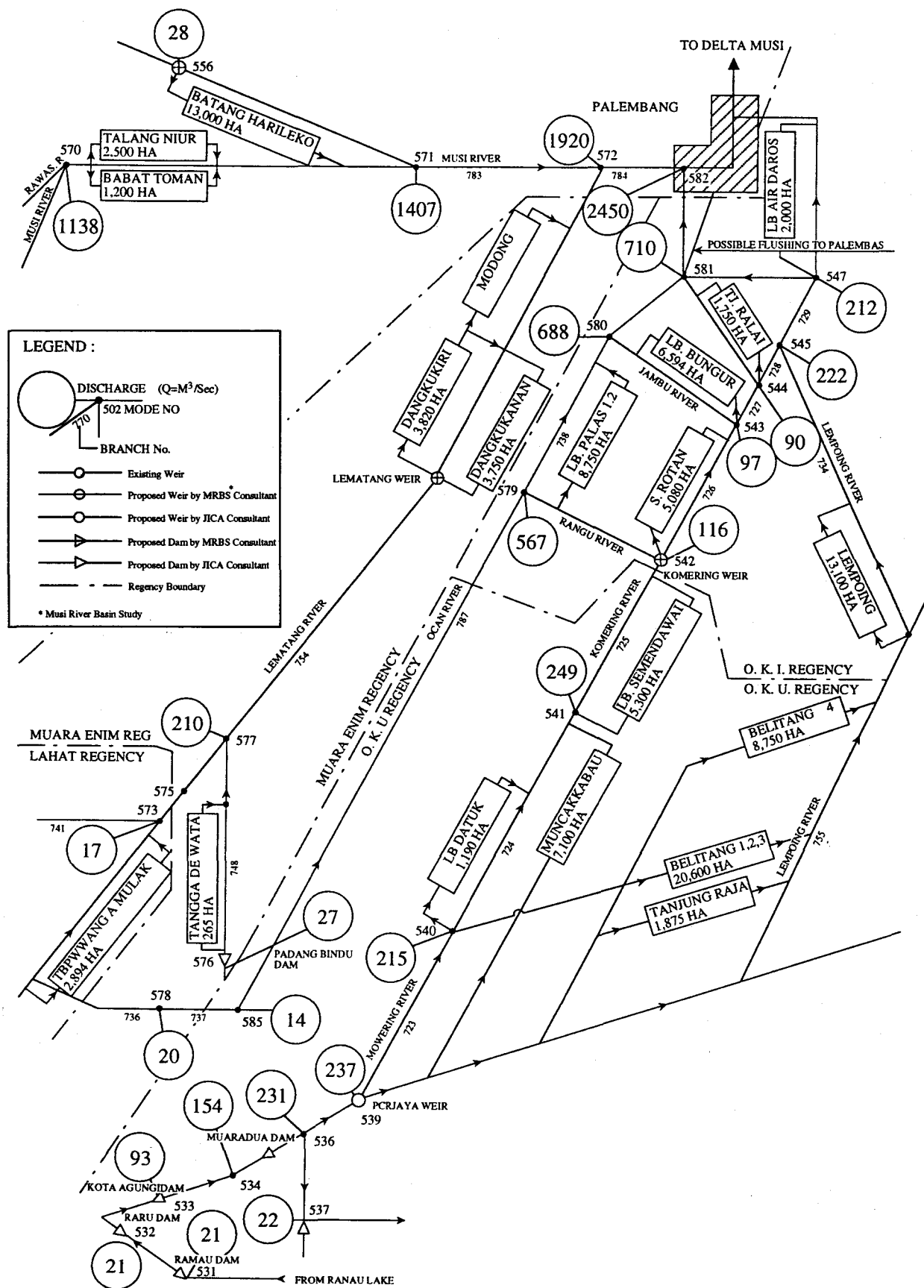


図 2.2.1 オガン・コメリン川の年平均流量

## 2.3 西ランボン地区およびスマンカ川流域灌漑開発計画

### 2.3.1 計画の背景

インドネシアにおける農業の重要性は前記したとおりであるが、ランボン州においてはその重要性はさらに高まり、農業部門は、州のGRDP (Gross Regional Domestic Product) の42%を1990年において占めている。これは、農業生産ポテンシャルがランボン州において高いというだけでなく、生産基盤整備に対する国あるいは州政府、さらには民間の投資が継続して行なわれてきた結果である。

しかしながら、本計画の対象地域である西ランボン地区およびスマンカ川流域は、交通の便の悪さもあり、ランボン州のなかでも開発に取り残されている地域である。農業が主要産業であるにもかかわらず、農業インフラ整備の遅れのため、そこでの農業生産性は低く農家も貧しい経営を余儀なくされている。

こうしたことから、本地域における農業インフラ、特に灌漑農業開発を柱とした開発を行ない農業生産性を高め、農家経済の改善をはかると共に、州内の地域間格差を是正することを主眼とする本調査実施の重要性が州および中央政府により認識されるに至った。しかしながら、本計画の策定に当たっては、本地域の州内での位置づけ、本計画の国家あるいは州開発計画の枠組みのなかでの策定、水および土地資源の農業への総合的利用計画策定の必要性などから、公共事業省水資源総局は、日本政府の技術協力を得て調査を進めたいと強く希望している。

### 2.3.2 計画地区の概要

#### (1) 位置

計画対象地域は、ランボン州の南西部に位置する。地域を南北に走るバリサン山脈 (Barisan Range) を境界として、東側にスマンカ川流域、西側に西ランボン地区が位置する (位置図参照)。行政的には、西ランボン県は、6郡 (Pesisir Utara, Pesisir Tengah, Pesisir Selatan, Balikpapan, Belalau, Sembur Jaya) からなり、総面積は4,950 km<sup>2</sup>である。スマンカ川流域は、上流域が西ランボン県のBelalau 郡に、下流域が南ランボン県のWonosobo郡に属している。その流域面積は、955km<sup>2</sup>である。

#### (2) 自然条件

計画対象地域は多雨地帯として知られており、バリサン山脈周辺の年平均降水量は3,000 mm以上である。気温は年間を通じてその変動は小さく、日平均気温の最高で34° C、最低で21° Cである。

西ランボン県はその地形的特徴により、バリサン山脈から南西方向に多数の小河川がインド洋に流下しており、州の資料によれば主要な小河川は26河川を数える。バリサン山脈からインド洋までの距離が20km弱と短いため、多雨地帯であるにもかかわらず、また地形が急しゅんであることも相俟って本地域の水および土地資源の開発は非常に遅れている。

スマンカ川は、バリサン山脈と平行して南東に流下する中河川で流域面積は955 km<sup>2</sup>、各月



の平均流出量は1992年の州公共事業省の資料で次のとおりである。

(単位: ton/sec)

1月	2月	3月	4月	5月	6月	7月	8月	9月	10月	11月	12月
65.3	92.9	74.7	59.0	66.2	45.0	44.8	35.6	64.8	62.5	71.1	77.8

また、年間総流出量は同様の資料で1,999 MCMとなっている。

### (3) 社会条件

西ランボン県の人口は、1990年の資料で309,000人、人口密度は62人/km<sup>2</sup>あり州の平均170人/km<sup>2</sup>と比較して非常に低い値となっている。西ランボン県内の郡別比較では、ラナウ湖の南に位置するPasisir Tengah郡の225人/km<sup>2</sup>が最高で、半島部に位置するPsisir Selatan郡の19人/km<sup>2</sup>が最低となっている。スマンカ川流域の人口は不明であるが、1990年の郡別の資料に基づく調査団の推計では約100,000人である(105人/km<sup>2</sup>)。

### (4) 農業

両地域の主要な作物は水稻で、一部の灌漑地区を除けば雨期に栽培されている。その他、畑作物としてトウモロコシ、さつまいも、落花生等が栽培されている。西ランボン県の水稻作付け面積は1991年の資料で約11,000ha、単位収量3.9ton/ha、生産量43,200tonとなっている。この単位収量は州平均4.3ton/haの約90%である。州公共事業局管轄の灌漑面積は、1991年の資料で雨季に1,076 ha、乾季に830 haとなっている。また灌漑施設の整備水準による分類では、Technical irrigation sytem が225 ha、Semi-technical irrigation が1,065 ha、合計 1,290 haとなっている。前述したように、地形による制約から農地が限られていること、さらに、小河川の水が利用しにくいことから、灌漑施設の整備は遅れており水稻の灌漑栽培面積(州公共事業局管轄面積)は全水稻作付け面積の僅か17%に留まっている。こうした状況を認識する州政府は、既存施設の改修および新規開発を含む、約22,000 haの灌漑整備を西ランボン県において計画している。

スマンカ川流域における既存灌漑水田面積は約1,200 haである。このうち830 haで2期作が、370 haで1期作が行なわれている。州公共事業局の資料によれば、この既存灌漑施設の改修により1,600 haが灌漑可能となる。加えて、約2,000 haの灌漑水田拡張をスマンカ川下流域右岸地区に計画している。また、中流域にも2,000 ha程度の開発ポテンシャルを有している。

## 2.3.3 計画の概要

### (1) 計画の目的

本計画の目的は、西ランボン地区およびスマンカ川流域の土地・水資源開発の最適利用をベースに灌漑施設および農地の整備を行なうものである。これにより、農業生産性を高め、国家政策に基づく、地域間格差の是正、貧困の撲滅、食用作物の安定的供給を達成するものである。

### (2) 灌漑開発計画

西ランボン地区では、同地区の土地および水資源の開発ポテンシャルを明かにした後、州政府の持つ合計22,000 haの中・小規模灌漑整備計画のレビューを行なう。さらに、個々の計画の

開発優先順位付けをランボン州および西ランボン県の社会的、経済的必要性等に基づいて行なう。その後、選ばれた優先計画に対してF/Sを実施する。

スマンカ川流域も同様に土地および水資源の最適利用を柱とする既存灌漑施設の改修、拡張計画を中心とした灌漑整備計画を州および県の開発戦略の枠組みになかで行なう。ダム建設の可能性、新規頭首工建設の可能性等の比較検討も行ない開発の基本構想をまとめる。その後、改修、拡張計画を中心にF/Sを行なう。

さらに、付随する計画として、農道整備、農村電化、農村給水等の施設の必要性・適性規模の検討も両地域において行なう。

### (3) 農業開発計画

全体計画の中では、土地・水資源に加え人的資源の農業開発への利用可能性、作物多様化の可能性、増産技術導入の可能性、地域開発計画と農業開発の整合性等につき検討を行なう。本計画の目的でもある米の安定生産、増産による自給率の向上、農家経済の改善に対しても検討を行ない、農業開発基本構想を策定する。その後、選ばれた個々の計画に対して最も適切な農業開発計画を策定することになる。将来の農業生産にとって必要となる、農業普及、水監理等の農業支援制度についても検討・提言を行なう。

#### 2.3.4 相手国政府の意向

本計画は、灌漑施設整備を通じたランボン州の後進地域の農業開発計画である。州内他地域への投資は、ランボン州がインドネシアの首都ジャカルタに近いこともあって、政府、民間を問わず比較的活発に行なわれてきた。GRDPの伸率も高く、実質ベースで1989年に8.3%、1990年に7.7%を達成している。しかし、本地域では交通の便の悪さなどから開発が遅れており、基幹産業である農業の生産性も農業基盤整備の遅れにより低いレベルにとどまっている。こうした状況を打開するうえで本計画の重要性は非常に高いといえることができる。中央および州政府は、本計画が地域間格差の是正、貧困の撲滅、食用作物の安定供給といった国家政策に沿ったものであることから、その実現に高いプライオリティを与えている。

### 3. マレーシア

#### 3.1 背景

##### 3.1.1 マレーシアの社会・経済現況

マレーシアは13州と2つの連邦区（クアラルンプールおよびラバアン）からなる連邦国家である。半島マレーシアには：

- 1) ペルリス（Perlis）、
- 2) ケダ（Kedah）、
- 3) プラウピナン（Pulau Pinang）、
- 4) ペラ（Perak）、
- 5) スランゴール（Selangor）、
- 6) ネグリスンビラン（Negeri Sembilan）、
- 7) マラッカ（Melaka）、
- 8) ジョホール（Johor）、
- 9) パハン（Pahang）、
- 10) トレンガヌ（Trengganu）、および
- 11) クランタン（Kelantan）

の11州、ボルネオ島に：

- 1) サバ（Sabah）および
- 2) サラワク（Sarawak）

の2州がある。半島マレーシアの各州はいくつかの郡に区分され、サバ、サラワクには州と郡の中間行政単位としての地方（Residency または Division）が設定されている。面積構成比は半島マレーシアが39.4%、サラワク州が37.3%、サバ州が22.3%である。

1991年におけるマレーシアの総人口は1,760万人、そのうち1,412万人が半島マレーシア（クアラルンプールを含む）、174万人がサバ、165万人がサラワクに居住している。連邦の首都クアラルンプールの人口は、115万人である。1980年から1991年までの11年間の年平均人口増加率は2.24%である。人口密度は半島マレーシアにおいて107.4人/km<sup>2</sup>、サバ23.6人/km<sup>2</sup>、サラワク13.2人/km<sup>2</sup>である。

国内総生産（GDP）は、1978年価格表示で1985年にはMR. 571億であったものが、年平均6.7%の割合で成長し、1990年にはMR791億に達した。GDPに占める製造業部門のシェアは過去5年間に19.7%から27.0%に上昇し、他方、農林水産部門のシェアは20.8%から18.7%へ低下している。主要輸出産品は電気・電子製品、工業製品、石油、原木およびパーム油であり、1992年の商品輸出総額は時価MR 71,010億を記録した。このうち、電気・電子製品の輸出の伸びが著しく1985年から1992年の年平均成長率は30.4%であった。

1992年現在の労働人口は706万人、失業率は3.9%である。就業人口構成は、農林水産業に26%、製造業に21%、卸・小売り業等に20%、その他に34%となっている。近年の急速な製造業

部門の発展による労働力不足は深刻で、労働賃金の上昇、農業労働人口の流出および高齢化等が問題となっている。

### 3.1.2 新国家農業政策および第6次5か年計画

1993年初めに公表された新国家農業政策（1992 - 2010年）は、その目標を近代的（Modernised）、商業的（Commercialised）および持続的（Sustainable）な農業への移行促進とし、これにより収入の最大化を図るというものである。このための戦略として次の6項目を掲げており、2010年までの農業部門の年平均成長率を3.1%に設定している。

- 1) 土地、水および人的資源の他部門との調和のとれた有効利用
- 2) 農産加工等、農業関連産業の開発推進
- 3) 研究開発活動の革新
- 4) 民間活力主導によるアグリビジネスの推進および内外市場での競争力強化
- 5) 市場の必要性に対応すると共に競争力のある市場・流通システムの導入
- 6) 内外市場を対象とする食品工業開発

一方、短期計画である第6次5か年計画（1991 - 1995年）における農業部門の作物別の生産成長率は、次表のとおり、園芸作物、漁業養殖および畜産に高い伸びを期待している。

	1990年 (‘000 トン)	1995年 (‘000 トン)	伸び率 (%/年)
<b>作物</b>			
ゴム	1,291	1,300	0.1
パーム油	6,095	7600	4.5
カカオ	262	339	5.3
米 (paddy)	1,590	1,671	1.0
ココナッツ *	1,557	1,572	0.2
コショウ	29	36	4.4
パインアップル	173	248	7.5
野菜 **	224	256	2.8
果実 **	1,165	1,584	6.3
たばこ	10	13	5.0
<b>水産</b>			
海洋漁業	830	984	3.5
養殖	75	113	8.4
<b>畜産</b>			
牛肉	18	21	3.2
マトン	0.7	1.0	7.8
鶏肉	368	560	8.8
卵	4,718	5,645	3.7
豚肉	211	287	6.3
牛乳 ***	34	68	14.8

出典：第6次5か年計画（1991-95）

\* 百万個

\*\* 半島マレーシアだけのデータ

\*\*\* 百万リッター

### 3.1.3 農業セクターの現況

マレーシアの農業は、伝統的に輸出作物向けの一次産品生産に極度に傾斜したモノカルチャー構造が完熟域に達しており、その一方で食糧・農産品の多くを輸入に依存していることが一大特徴となっている。これを主要作物の栽培面積で見ると、1990年においてオイルパーム、ゴムおよびカカオはそれぞれ1,984,000ha、1,833,000ha、420,000haであり、その合計面積4,237,000haは同年の水稲栽培面積650,400haの約6.5倍となっている。

作物生産量を1985年および1990年のデータで見ると、高い伸びを示している品目は次表のとおりプランテーション作物ではカカオ、コショウ、オイルパーム、食用作物では果実、水産では海洋漁業、養殖とも、畜産では鶏肉および牛乳である。一方、マイナス成長はココナッツ、ゴム、米において見られる。米の国内生産量は、国内消費を賄うには不足し毎年40万トン程度を輸入をしている。

	1985年 ('000 トン)	1990年 ('000 トン)	伸び率 (%/年)
作物			
ゴム	1,470	1,291	-2.6
パーム油	4,133	6,095	8.1
カカオ	108	262	19.4
米 (paddy)	1,953	1,590	-4.0
ココナッツ *	1,826	1,557	-3.6
コショウ	19	29	8.7
パインアップル	153	173	4.0
野菜 **	184	224	4.0
果実 **	852	1,165	6.5
たばこ	9	10	2.1
水産			
海洋漁業	575	830	7.6
養殖	51	75	8.0
畜産			
牛肉	17	18	1.1
マトン	0.6	0.7	3.1
鶏肉	251	368	8.0
卵	3,395	4,718	6.8
豚肉	164	211	5.2
牛乳 ***	24	34	7.2

出典：第6次5か年計画（1991-95）

\* 百万個

\*\* 半島マレーシアだけのデータ

\*\*\* 百万リッター

新国家農業政策（1992 - 2010年）の策定において認識されている、マレーシアの農業部門が直面する問題は次の点にまとめることができる。

- 1) 労働力不足による労働賃金の上昇。

- 2) 農業部門の低い労働生産性
- 3) 農業部門に対する少ない投資、特に最近の低い民間投資額。
- 4) 経済自由化傾向に伴う市場での競争激化。
- 5) 農業労働力の高齢化および低い教育レベル。
- 6) 生産費上昇に伴う競争力の低下。

### 3.2 園芸作物流通システム改善計画

#### 3.2.1 経緯・背景

新国家農業政策（1992 - 2010年）において強調されている農工間の調和のとれた経済成長達成のためには、農業生産の多様化促進を継続することが不可欠である。この多様化促進の継続において、マレーシアの農業開発戦略の重点項目として位置づけられているのは、作物生産では園芸作物であり畜産では養鶏と乳業である。これらの生産振興において第6次5か年計画期間（1991 - 1995年）では農業部門全体の成長率を年平均3.5%としているにもかかわらず、果実では6.3%、養鶏で8.8%、乳業で14.8%を見込んでいる。しかしながら、従来の農業政策がこれら項目の生産技術面の改良に依存してきたため、生産者の収入増を確保し、農業部門の平均成長率3.5%を大幅に上回る成長を達成するには、生産物の付加価値を高める必要がある。その手段として流通・販売面の合理化・近代化と加工面の強化が今後緊急に推進すべき課題となっている。

1965年に農業省の外局として設立された連邦農業流通庁（FAMA）は、ゴム、オイルパーム、水稻、煙草、パイナップル、ココア、海水魚を除く農畜水産物の流通に係る監督・調整・改善業務を担当する行政機関として機能してきた。マレーシア政府の政策方針を踏まえ、農業生産者の経営自立及び多様化する消費者需要へ適切に対応するために、農業省並びにFAMAは関与する産品を中心とした流通システムの将来像確立と行政機構の関与すべき分野及びその機能の再検討に関する調査実施を決定した。

FAMAはこの調査の内容が多岐にわたりかつ客観的判断を要する検討項目が多数含まれていることを考慮し、日本政府の技術協力を得て調査を進めたいと強く希望している。

本計画の短期的目標は、供給・需要・流通ネットワークを統合したFAMAの関与する農産品流通システムの整備・改善に係る実施計画を策定することにある。その主な内容は、i) 流通及び市場情報システムの整備、ii) 市場及び農産物加工施設の整備、iii) 流通関連業者の育成、iv) 市場流通への農民参加、v) 貿易業務の近代化、及びvi) 官民協力の合理化である。長期目標は、市場流通システムの改善、農産加工施設の整備及び人的資源の開発によりこれら農産品の生産、市場・流通における問題を解決することにより生産者の収入増を図ると共に市場流通関連企業家の育成を行なうものである。

#### 3.2.2 計画の概要

##### （1）計画対象地域

調査は、FAMAの活動が半島マレーシアおよびサバ、サラワクにまたがるため、マレーシア

全国を対象に行なう。

## (2) 計画の概要

本計画の短期的目標の早急な実現のため、市場流通インフラの近代化及び関連企業・業者の開発を意図する流通システム整備・改善パイロット事業を実施し、これをモデルとしてFAMAの関与する農産品の内、野菜、果実および花卉の流通システム改善を行なう。同時に、FAMAの流通システム改善における役割及び機能の評価・分析も行なう。

本計画の受益者は、生産および加工にかかわる小規模農家・生産者、貿易業者・卸売り業者・小売業者および消費者である。加えて、市場・流通にかかる計画および政策の立案機関である農業省、農業流通庁（FAMA）、農業局（DOA）等も利益を受ける。

### 3.2.3 総合所見

マレーシアはASEAN諸国の中でも近年特に優秀な実績を示し、1980年代後半には工業製品がGDPと輸出において一次産品を凌ぐまでになった。しかし、その成長が急速であったために労働力、インフラ、企業間の連携等の面で様々な歪みが近年表面化してきた。そして現在は2020年までには先進工業国入りすることを目標とする高度成長とこれら歪みの克服を含む経済・産業構造の転換が進行中である。

こうした背景のもとに構想された本計画は、先に述べた6項目にわたる新国家農業政策の戦略のうち、i) 農産加工等、農業関連産業の開発推進、ii) 民間活力主導によるアグリビジネスの推進および内外市場での競争力強化、iii) 市場の必要性に対応すると共に競争力のある市場・流通システムの導入、iv) 内外市場を対象とする食品工業開発に直接的、間接的に関係するものであり、これを実施する意義は非常に大きいものと判断される。

なお、FAMA側はADCA調査団に対してFAMAの関与する農産品全てを調査対象とするTORを提示したが、調査対象品目を広げ過ぎると問題点の絞り込みにおいて焦点があいまいになる恐れがあることを考慮して、まず、野菜、果実、花卉を対象とした調査を実施することを提案したい。これら農産品流通システムの整備・改善計画の策定の後、さらに必要（あるいは要請）があればその他の農産品を対象とした調査を改めて実施することも可能であろう。

ADCA調査団の提案するTORを本報告書の資料－3に、FAMAの提示したTORを資料－4にそれぞれ添付する。

## 添付資料－１

インドネシア共和国

オガン・コメリン川下流域総合農業開発計画調査実施のためのTOR（案）



**Application for the  
Technical Cooperation (Development Study)  
by the Government of Japan**

**1. Project Digest**

(1) Project Title

The Ogan-Lower Komering River Basin Integrated Agricultural Development Plan Study

(2) Location

Kabupaten OKI (Ogan Komering Ilir) and a part of Kabupaten OKU (Ogan Komering Ulu), South Sumatra Province

(3) Implementing Agency

Directorate General of Water Resources Development (DGWRD), Ministry of Public Works (MPW)

(4) Justification of the Project

Present conditions of the sector

Agriculture remains the key sector of the Indonesian economy, contributing about 21% of GDP (in constant terms), providing employment of some 55% of the labor force and generating about 56% of the non-oil exports. Within the sector, food crops constitute the largest subsector, contributing 52% of the agricultural GDP. Rice alone accounts for about 30% of the agricultural GDP.

Sectoral development policy of the national/local government

In Repelita VI (6th five-year plan from 1994/95 to 1998/99), agriculture development is to be directed towards increasing the income and living standards of farmers, expanding the employment and business opportunities by means of developed, efficient and solid agriculture so as to be able to increase the diversification of products, improving the products quality and processing levels, and to support regional development. In food crop sub-sector, sustenance of the self-sufficiency of food, increase of the people's income, and increase of the nutrition level is to be emphasized. Development of irrigation is to be continued by expanding the irrigation schemes so as to get more balanced in the use of water and to ensure conservation of water, protecting the production areas and preventing devastation by floods and drought, and to support the utilization of new agriculture fields, and provision of water to the people.

The provincial government of South Sumatra Province aims at balanced economic growth between agriculture and industry and gives higher priority for the agricultural development in the Ogan-Lower Komering River Basin.

Problems to be solved in the sector

Present problems to be solved in the sector is summarized as follows:

- a. poverty of farmers;
- b. low economic growth of the agricultural sector;
- c. shifting rural population to urban area to get more work opportunities, and thereby, causing urban slum problems;
- d. regional imbalance of development; and
- e. decrease of agricultural fields in Java island

### Outline of the Project

The project aims at agricultural development in the Ogan-Lower Komering River Basin which is extended to the south of Palembang city, a capital of South Sumatra province. The need and importance of the agricultural development in the Basin is clear by the reasons that:

- 1) Kabupaten OKI is one of poverty regions in the province due mainly to lack of infrastructure for agricultural production. Under such situation, OKI's population, most of them are farmers, flows to Palembang city and forms poorer slums,
- 2) Potential for agricultural development is high in the Basin ,
- 3) There is a plan for the construction of Eastern Sumatra Highway which runs within the Basin connecting Bandar Lampung, Palembang, Jambi, Riau and Medan. Once this road network completed, marketing potential of agricultural products in the Basin will be increased, and
- 4) The provincial government aims at balanced agricultural development between the Upper and Lower Komering Basins. In this context, the provincial government recognizes the needs of investment for the agricultural development in the Lower Komering Basin, since the irrigation development is under implementation only in the Upper Komering Basin.

Based on the above understanding, the Study will firstly be carried out for the formulation of integrated agricultural development plan taking an optimum use of land and water resources into account. The plan will be formulated not only for food crops, but for estate crops, aquaculture and livestock development, and institutional supporting services required for the agricultural development. Then, within the frame of the integrated agricultural development plan, a feasibility study will secondly be carried out for the assessment of technical and economic viability of priority projects to be identified in the integrated planning.

Although these should be reviewed, priority projects identified in the previous study of Master Plan for Southern Sumatra Land and Water Resources Development are as follows:

#### 1) Irrigation Development

Scheme	Location	Command Area
Lebak Semendawai	Kb. Ogan Komering Ulu	5,300 ha
Lebak Palas	Kb. Ogan Komering Ilir	8,750 ha
Lebak Bungur	Kb. Ogan Komering Ilir	6,590 ha
Sungai Rotan	Kb. Ogan Komering Ilir	5,080 ha
Tanjung Balai	Kb. Ogan Komering Ilir	1,750 ha
Lebak Air Daros	Kb. Ogan Komering Ilir	1,000 ha
Total		28,470 ha

## 2) Drainage improvement

- a. Komering Drainage Diversion Channel to divert the flood from the Komering River to the Babatan River. The total length of channel will be 65 Km for which 25 Km of new channel excavation is required,
- b. Levee embankment for the both sides of Ogan River between Muara Kuning and Tanjung L with a length of 47.5 Km.
- c. Plugging to the existing connecting streams between Ogan and Komering Rivers. These are Randu, Jambu, Segonang and Terusan streams.

### Purpose (short-term objectives) of the Project

Through implementation of the study, the following immediate objectives will be achieved:

- a. to formulate an integrated agricultural development plan for the Ogan-Lower Komering River Basin,
- b. to study an impact of the agricultural development to Palembang city and the downstream areas of the Ogan-Lower Komering Basin,
- c. to select priority projects for the agriculture development and carry out feasibility studies on these schemes;
- d. to propose means of improvement of the existing inland swamp paddy cultivation, and
- e. to transfer knowledge and know-how to counterpart personnel through the study.

### Long-term Objectives

In conformity with the national development strategy, the long term objectives of the Study can be determined as follows:

- a. to carry out irrigation development for an estimated area of about 28,500 ha,
- b. to improve the drainage condition for the populated zones and cultivation fields in the Basin,
- c. to improve the regional, social and economic conditions particularly for the smallholders in terms of poverty alleviation, and
- d. to maintain the environmental condition of the Basin.

### Prospective beneficiaries

Potential beneficiaries of this Project would be the population within the area of Kabupaten OKI (estimated to be 678,000 persons in 1989) and a part of Kabupaten OKU (28,000 persons). Particularly, about 124,000 rural families with 657,000 persons in these areas would get benefit directly from the proposed Project.

## (5) Desirable or scheduled time of the commencement of the Project

In order to carry out balanced development between the Upper and Lower Komering River Basin, the Ministry of Public Works has a plan to implement the proposed study in 1995. The relation between the proposed study and the on-going Upper Komering Irrigation Project is as follows:

	93	94	95	96	97	98	99	00	01	02	03	04
A. Ogan-Lower Komering												
- Integrated Agri. Plan			=====									
- Feasibility Study (F/S)						=====						
- Detailed Design (D/D)									=====			
- Construction											=====	
B. Upper Komering												
- Stage-I (Construction)		=====										
- Stage-II (Construction)			=====									
- Stage-III												
F/S		=====										
D/D				=====								
Construction							=====					

(6) Expected funding source and/or assistance

The proposed project has firstly identified by "Master Plan for the Komering River Basin Development Project" in 1981 by JICA, which covers whole Komering River Basin. The Upper Komering Irrigation Project which is the first priority project in the basin is being implementation since 1991 under a financial assistance form OECF Japan. In consideration of the said historical background and expectation for further financial assistance from Japan, the Government of Indonesia has made this special project aid proposal to Japan.

(7) Other relevant Project

Comprehensive Study on the Upper Komering River Basin Development (JICA)

The study was carried out to identify the development potential in the Komering River Basin by JICA in 1979. The Lower Komering Irrigation and Drainage Project was also identified regarding its development potential in this comprehensive study.

Musi River Basin Study; Master Plan for Southern Sumatra Land and Water Resources Development (EEC)

This study was conducted in 1989 by EEC covering the whole sectors related to the water resources development and river management for Musi River Basin including all the tributaries including Ogan and Komering Rivers. The study recommended to implement the Lower Komering irrigation development during the next national development plan, Repelita VI (1994/95-1989/99). The preliminary study was made on the Lower Komering Irrigation Schemes and on the estimate of tentative implementation cost.

The Study on the Integrated Regional Development Plan for the Southern Part of Sumatra (JICA)

The study was made by JICA during 1991-1993 period covering whole socio-economic sectors including agriculture for four provinces in southern part of Sumatra, i.e. South Sumatra, Jambi, Bengkulu and Lampung. The study recommended to develop the Ogan-Lower Komering River Basin in an integrated manner.

## **2. Terms of Reference of the Proposed Study**

**(Refer to Attachment 1)**

## **3. Facilities and Information for the Study Team**

- (1) Assignment of counterpart personnel of the implementing agency for the Study

The implementing agency of MPW has a capacity to assign counterpart personnel corresponding to a number of Study Team members to be organized by the Government of Japan.

- (2) Information on the security conditions in the Study Area

There is no problem regarding security in South Sumatra province.

## **4. Global Issues**

- (1) Environmental components:

It is proposed to conduct an environmental study in the course of the proposed study in accordance with the Indonesian Government regulation No. 29, 1986 regarding the analysis of impacts upon the environment.

- (2) Anticipated environmental impacts by the Project:

Negative effects are predicted on downstream tidal swamps and water quality from the agricultural development in which intensive use of agro-chemicals would be practiced. Although it is considered that the predicted negative effects would be minimum because only limited area would be developed in the Basin, it is necessary to assess an environmental effects of the Project in the proposed Study.

- (3) Women as main beneficiaries or not:

Women are participating in farming activities to an considerable extent, but not the main beneficiaries of the Project.

- (4) Project Components which require special considerations for women:

Women's participation in agricultural production activities.

- (5) Anticipated impacts on women caused by the Project:

By controlling river flows in Ogan and Komering Rivers with plugging of channels, a certain amount of flow would become available in the downstream of Komering River where no water is available during the dry season at present. This would reduce women's work in obtaining potable water in the downstream areas during the dry season.

- (6) Poverty reduction components of the Project:

Improvement of farmers economy through the agricultural production increase.

- (7) Any constraints against the low income people caused by the Project: None

## **5. Undertaking of the Government of Indonesia**

In order to facilitate a smooth and efficient conduct of the Study, the Government of Republic of Indonesia shall take necessary measures:

- (1) To secure the safety of the Study Team,
- (2) To permit the member of the Study Team to enter, leave and sojourn in Republic of Indonesia,
- (3) To exempt the Study Team from taxes, duties and any other charges on equipment, machinery and other materials brought into and out of Republic of Indonesia for the conduct of the Study,
- (4) To exempt the Study Team from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Study Team for their services in connection with the implementation of the Study,
- (5) To provide necessary facilities to the Study Team for remittance as well as utilization of the funds introduced in the Republic of Indonesia from Japan in connection with the implementation of the Study,
- (6) To secure permission or entry into private properties or restricted areas for the conduct of the Study,
- (7) To secure permission for the Study to take all data, documents and necessary materials related to the Study out of the Republic of Indonesia to Japan,
- (8) To provide medical services as needed. Its expenses will be chargeable to members of the Study Team.

6. The Government of Indonesia shall bear claims, if any arises against member(s) of the Japanese Study Team resulting from, occurring in the course of or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the member of the Study Team.

7. The Directorate General Water Resources Development (DGWRD) shall act as counterpart agency to the Japanese Study Team and also as coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.

The Government of Indonesia assured that the matters referred in this form will be ensured for a smooth conduct of the Development Study by the Japanese Study Team.

**Signed:**

**Titled:**

**On behalf of the Government of Indonesia**

**Date:**

**TERMS OF REFERENCE  
FOR  
THE OGAN-LOWER KOMERING RIVER BASIN  
INTEGRATED AGRICULTURAL DEVELOPMENT PLAN STUDY**

## **1. Justification of the Study**

### **1.1 Background**

The agricultural sector in Indonesia has been playing an important role in its economy. The sector accounts for about 21% of GDP in 1989/90. In the agricultural sector, the food crop sub-sector is dominant, sharing about 52% of the agricultural GDP. Such tendency of importance of food crop, mainly of rice, will continue in the future due to the Indonesia's population growth at around 2.0% per annum. For sustaining self-sufficiency in rice, the Government of Indonesia (GOI) expects several provinces including South Sumatra to be extensive paddy production with high efficiency. The provincial government also expects to the Ogan-Lower Komering River Basin together with the on-going Upper Komering Area to be a provincial and state rice granary.

In addition, the Ogan-Lower Komering River Basin is defined as one of the future agro-industrial zones aiming at marketing of agricultural production to Palembang, Bandar Lampung and Java utilizing Eastern Sumatra Highway which is under planning for the construction. It is expected that once this highway is completed, the route will constitute a new and more efficient artery for Sumatra than the existing Trans Sumatra Highway.

In and around Palembang city, there are many poor villages and/or slums, located mainly along the Musi River and the tributaries in the city. Without taking proper countermeasures, in the near future, such situation will become obstacles to the municipal development. Inhabitants in those poor villages and/or slums are mainly formed by poor farmers from the surround Kabupatens such as OKI, one of the objective area of the Study, and Musi Banyuasin.

The implementation of the Study and countermeasures to be taken based on the Study will, therefore, result in an improvement of such social situation in and around Palembang city through farmers returning to their native villages. In addition, the implementation of the Study will result in the improvement of economic situation in the region through the development of agriculture which is the main sector of the region.

### **1.2 Needs of Integrated Agricultural Development Plan Study**

With regard to the agricultural development in the Ogan-Lower Komering River Basin, three major studies have been made in the past. These are i) Comprehensive Study on the Upper Komering River Basin Development in 1980 by JICA ii) Master Plan for Southern Sumatra Land and Water Resources Development in 1989 by EEC and iii) the Study on the Integrated Regional Development Plan for the Southern Part of Sumatra in 1993 by JICA. All these studies emphasize the importance of agricultural development in the Ogan-Lower Komering River Basin so as to alleviate poverty of farmers and thus contribute to the regional economic growth.

Particularly in the above study ii), among others, irrigation and drainage development for



the total of six locations (schemes) has been identified in the Basin and recommendations have been made to conduct a feasibility studies for these schemes to assess the technical and economic viability as a next step for the development. In the above study ii), however, the water balance study has been made based on the assumption that irrigation development in the Upper Komering would be a maximum area of about 55,000 ha. Since the on-going Upper Komering Irrigation Project has a final target for the development of about 120,000 ha until 2004, it is necessary to review the water resources development plan formulated in the previous studies prior to implementation of the proposed feasibility studies. In addition to the said review on the water resources, it is necessary to review and update the previous proposals on land and agricultural development in an integrated manner whether these proposals meet the latest national and regional development plans. An advantage of the Eastern Sumatra Highway to the regional economy and agricultural development is also necessary to be studied.

Form the above points of view, integrated agricultural development plan study is needed to be conducted for the Ogan-Lower Komering River Basin.

## **2. Justification of the Japanese Technical Cooperation**

For the execution of the integrated agricultural development study, it is proposed to organize a study team under the Japanese technical cooperation program. This is because of the past history of the development of the Komering River Basin for which the Government of Japan has been providing a series of technical and financial assistance. These can be listed as follows:

- 1) Comprehensive Study on the Upper Komering River Basin Development was carried out by JICA during 1979-1980 period. A potential for the development of irrigation and drainage in the Ogan-Lower Komering River Basin was identified in this study.
- 2) Feasibility study on the Komering-I Irrigation Development Project in the Upper Komering River Basin was conducted by JICA during 1980-1981 period for the irrigation development for 36,700 ha of net area.
- 3) Pre-feasibility study on the Upper Komering River Basin Development Project was made by JICA during 1981-1982 period. In the study, the upper basin's water resources development plan was formulated in an integrated manner including the construction of dams at four locations (for hydropower development and water regulation) and the irrigation development for about 68,300 ha of net area.
- 4) Detailed Design for Stage-I and Stage-II of the Komering-I Irrigation Development Project was executed under the financial assistance of OECF during 1985-1988 period.
- 5) Stage-I construction works of the Komering-I Irrigation Development Project is on-going for 1990-1995 period under the financial assistance of OECF.
- 6) The Study on the Integrated Regional Development Plan for the Southern Part of Sumatra was carried out by JICA during 1991-1993 period. The study was made to formulate a long-term development plan covering all the economic sectors in the southern part of Sumatra (Jambi, South Sumatera, Bengkulu and Lampung).

### **3. Objectives of the Study**

The objectives of the proposed study are:

- 1) to formulate an integrated agricultural development plan for the Ogan-Lower Komering River Basin,
- 2) to study an impact of the agricultural development to Palembang city and the downstream areas of the Ogan-Lower Komering Basin,
- 3) to select priority projects for the agriculture development and carry out feasibility studies on these projects,
- 4) to propose means of improvement of the existing inland swamp paddy cultivation, and
- 5) to carry out technology transfer to the Indonesian counterpart personnel during the Study.

### **4. Area to be Covered by the Study**

The study covers the Ogan-Lower Komering River Basin with an approximate area of 6,500 km<sup>2</sup> which belongs to two Kabupatens and 10 Kecamatans as follows:

Kab. Ogan Komering Ilir (OKI)

- Kec. Muarakuang
- Kec. Tanjung Lubuk
- Kec. Pedamaran
- Kec. Kayuagung
- Kec. Tanjung Batu
- Kec. Tanjung Raja
- Kec. Sirah Pulau Padang
- Kec. Inderalaya
- Kec. Pemulutan

Kab. Ogan Komering Ulu (OKU)

- Kec. Cempaka

### **5. Scope of the Study**

In order to achieve the above objectives, the Study will be carried out during the total period of twenty four (24) months and consist of four (4) phases and the following items.

Phase-I: Survey and Investigation

- 1) Review and evaluation of the previous studies concerning mainly on the development potential of land and water resources including irrigation and drainage development, agro-industry development, and swamp land development and conservation.
- 2) Data collection and analysis:

- a) Topographic maps with scale of 1: 50,000;
  - b) Landsat image with scale of 1: 200,000;
  - c) GIS information for Kabupaten OKI and OKU;
  - d) Meteorological and hydrological data of the Ogan and Komering River Basins;
  - e) Land use, land suitability and soil data;
  - f) Regional and rural infrastructure development plans including roads and agro-industries;
  - f) Regional statistics on socio-economy; and
  - g) Institutional and regal information related to the agriculture development.
- 3) Field investigations and surveys on the present natural and socio-economic conditions in the study area.
  - 4) River morphological survey and study including river condition, water quality, sediment transport, tidal fluctuation, and salinity intrusion.
  - 5) Investigation of the previous flood record, inundation area and flood damages.
  - 6) Investigation of bankfull capacity of the existing river channels.
  - 7) Investigation of regional land use plan.
  - 8) Identification of the irrigation development schemes.
  - 9) Construction of flood runoff model for the Ogan and Komering River System.
  - 10) Identification of the drainage improvement schemes, including diversion channels if necessary.

#### Phase-II: Master Plan Formulation

- 11) Establishment of basic development concept including definition of the target of economic development for the Kabupaten OKI and OKU on 2015.
- 12) Estimate of development potential and demand on:
  - a) Land resources,
  - b) Water resources,
  - c) Irrigation and drainage,
  - d) Flood control,
  - e) Laboring opportunity, and
  - f) Rural economy.
- 13) Formulation of master plan for the integrated agricultural development which consists of:
  - a) Land resources development plan, including reclamation and improvement of farm land,
  - b) Water resources development plan, i.e. development of irrigation facilities, drainage improvement, flood protection, and water supply system including industrial water,
  - c) Agricultural development plan, including crop intensification and diversification, development of plantation estate in combination with the

- smallholder plantation and agro-industries, improvement of farming practices, strengthening of agricultural supporting services,
- d) Irrigation and drainage development plan, and
- e) Fishery and aquaculture development plan in inland swamps.
- f) Rural infrastructure development plan including village and farm road network, and rural water supply,
- g) Environmental and wild-life conservation schemes in relation to the above development.

#### Phase-III: Identification of Priority Projects

- 14) Sector and area-wide identification of the priority projects taking into consideration on the following components;
  - a) Irrigation and drainage development,
  - b) Agricultural development including improvement of farming techniques, agricultural extension and farmers organization,
  - c) Flood control, and
  - d) *Others considered necessary.*
- 15) Topographic survey for the selected projects with appropriate scale for the feasibility study.

#### Phase IV: Feasibility Study

- 16) Survey and investigation for the selected projects.
- 17) Formulation of development strategy for the selected projects.
- 18) Preparation of a preliminary design of the major facilities.
- 19) Estimate of the project costs and benefits.
- 20) Evaluation of the project.
- 21) Preparation of recommendations.

## 6. Study Schedule

The study will be carried out within 24 months as given in the attached tentative schedule.

The study will require in total 150 M/M of experts. Required input M/M of each expert is as follows;

<u>Expertise</u>		
1)	Team Leader	4
2)	Irrigation Engineer	23
3)	Drainage/River Engineer	23
4)	Land Use Planner/GIS Specialist	12
5)	Hydrologist/System Analyst	10
6)	Agronomist	6
7)	Pedologist	6

8)	Inland fishery expert	6
9)	Rural Planner/Sociologist	6
10)	Irrigation Planning/Design Engineer	20
11)	Drainage/River Design Engineer	10
12)	Geologist	6
13)	Project Economist	6
14)	Environmentalist	6
15)	Geodetic Expert	6
	<b>Total</b>	<b>150</b>

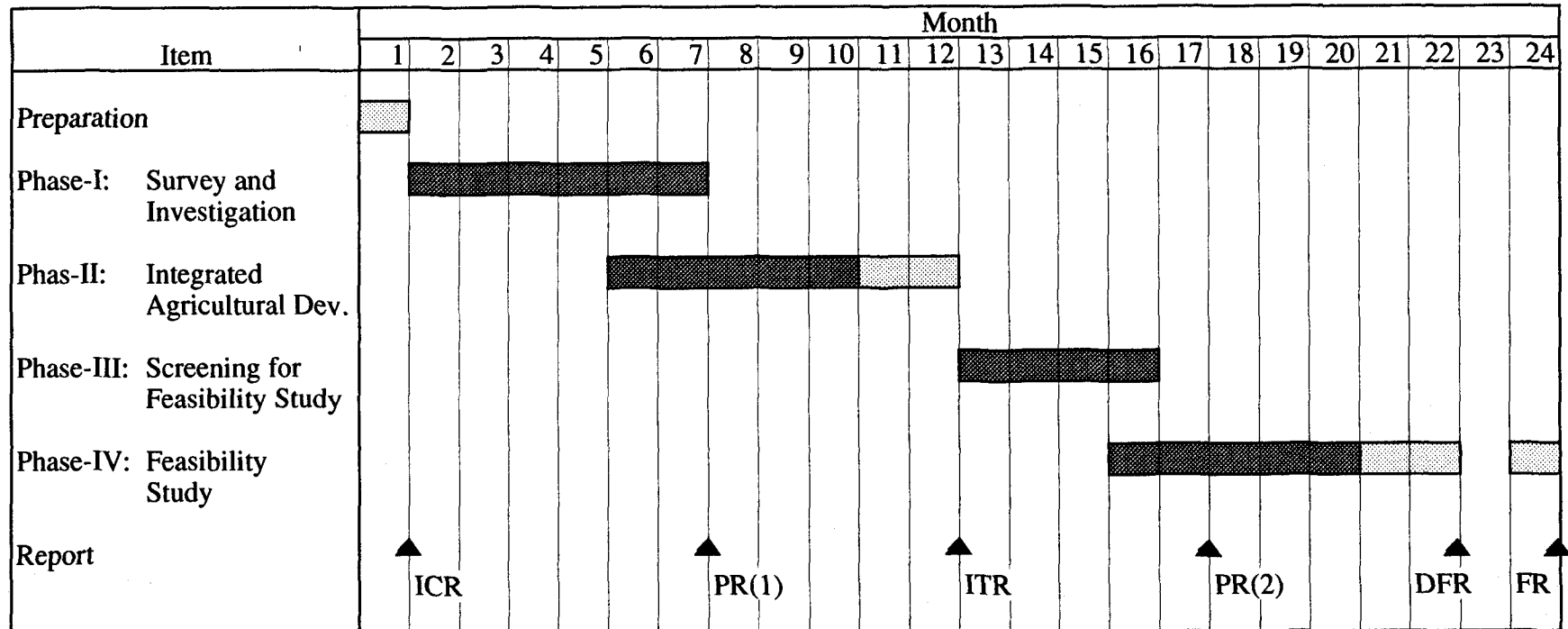
## **7. Expected Major Outputs of the Study**

Major outputs of the study are expected to be: i) integrated agricultural development plan for the Ogan-Lower Komering River Basin optimizing the land and water resources in the basin and ii) implementation program of the priority projects.

The study results will appear in the following reports and be submitted to the Government of Indonesia.

- 1) Inception Report : Twenty (20) copies at the end of one month after commencement of the study,
- 2) Progress Report : Twenty (20) copies at the end of Phase-I study,
- 3) Interim Report : Twenty (20) copies upon completion of the master plan study,
- 4) Draft Final Report : Twenty (20) copies at the end of twenty second month.
- 5) Final Report : Fifty (50) copies within two months after the receipt of the GOI's comments on the Draft Final Report.

## Tentative Work Schedule



(Note) Work in Indonesia

Work in Japan

ICR: Inception Report  
 PR(1): Progress Report (I)  
 ITR: Interim Report  
 PR (2): Progress Report (II)  
 DFR: Draft Final Report  
 FR: Final Report

## 添付資料ー 2

インドネシア共和国

西ランポン地区およびスマンカ川流域灌漑開発計画  
オーバーオールスタディ実施のためのTOR（案）

**Application for the  
Technical Cooperation (Development Study)  
by the Government of Japan**

**1. Project Digest**

**(1) Project Title**

Overall Plan Study on West Lampung District and Semangka River Basin Irrigation Development Project

**(2) Location**

West Lampung District and Semangka River Basin located at south eastern part of Lampung Province.

**(3) Implementing Agency**

Directorate General of Water Resources Development (DGWRD), Ministry of Public Works (MPW)

**(4) Justification of the Project**

**Present conditions of the sector**

Agriculture remains the key sector of the Indonesian economy, contributing about 21% of GDP (in constant terms), providing employment of some 55% of the labor force and generating about 56% of the non-oil exports. Within the sector, food crops constitute the largest subsector, contributing 52% of the agricultural GDP. Rice alone accounts for about 30% of the agricultural GDP.

**Sectoral development policy of the national/local government**

In Repelita VI (6th five-year plan from 1994/95 to 1998/99), agriculture development is to be directed towards increasing the income and living standards of farmers, expanding the employment and business opportunities by means of developed, efficient and solid agriculture so as to be able to increase the diversification of products, improving the product quality and processing level, and to support regional development. In food crop sub-sector, sustenance of the self-sufficiency of food, increase of the people's income, and increase of the nutrition level is to be emphasized. Development of irrigation is to be continued by expanding the irrigation schemes so as to get more balanced in the use of water and to ensure conservation of water, protecting the production areas and preventing devastation by floods and drought, and to support the utilization of new agriculture fields, and provision of water to the people.

The provincial government of Lampung Province aims at balanced regional development within the province giving a higher priority to the agricultural development both in West Lampung District and Semangka River Basin by the reasons that:

- 1) Economic situation in these areas are under developed comparing to that in



other regions in the province.

- 2) The development of agricultural infrastructure in these area is backward, although the agriculture is the major sector.

#### Problems to be solved in the sector

Present problems to be solved in the sector is summarized as follows:

- a. poverty of farmers;
- b. low economic growth of the agricultural sector;
- c. shifting rural population to urban area to get more work opportunities, and thereby, causing urban slum problems;
- d. regional imbalance of development; and
- e. decrease of agricultural fields in Java island

#### Outline of the Project

The project aims at agricultural development in West Lampung District and Semangka River Basin through a development and improvement of irrigation facilities. The needs and importance of the agriculture development in these areas are clarified as follows:

- 1) West Lampung District and Semangka River Basin are poverty regions in the province due mainly to lack of infrastructure for agricultural production,
- 2) Potential for agricultural development is high in these areas mainly by means of irrigation and drainage development,
- 3) An arterial road to be opened in 1996 is under construction connecting the Provincial capital of Bandar Lampung and Siging Town located at about middle of West Lampung District through the downstream area of Semangka River Basin. Once this road is completed, marketing of agricultural products in the West Lampung and Semangka River Basin will become much easier to the provincial capital, and
- 4) The provincial government aims at balanced agricultural development within the Province. In this context, the provincial government recognizes the needs of investment for the agricultural development to the West Lampung District and Semangka River Basin, because agriculture is the major economic sector in these areas.

The Study will firstly be carried out for the formulation of an overall irrigation development plan. In the overall planning, all potential schemes for the irrigation development and improvement will be screened to identify the priority schemes. Alternative studies for an optimum development, e.g. between construction of dam and intake weir for the water source development will also be carried out in this stage. The overall irrigation development plan will be formulated to maximize the agriculture production in the objective areas taking an optimum use of land and water resources into account. After overall planning, feasibility study will secondly be carried out for the assessment of technical and economic viability of priority schemes.

#### Purpose (short-term objectives) of the Project

Through implementation of the study, the following immediate objectives will be achieved:

- a. to formulate an overall irrigation development plan for West Lampung District and Semangka River Basin,
- b. to study on an optimum use of land and water resources for the maximization of agriculture production,
- c. to select priority schemes for the irrigation development and carry out feasibility studies on these schemes;
- d. to transfer knowledge and know-how to Indonesian counterpart personnel through the study.

#### Long-term Objectives

In conformity with the national development strategy, the long term objectives of the Study can be determined as follows:

- a. to carry out irrigation development so as to increase agriculture production and improve farmers economy, and
- b. to improve the regional, social and economic conditions particularly for the smallholders in terms of poverty alleviation.
- c. to accomplish balanced economic development in the Province.

#### Prospective beneficiaries

Potential beneficiaries of this Project would be the population within the area of West Lampung District estimated to be 309,000 persons in 1990 and Semangka River Basin (160,000 persons in the same), and 492,000 persons in total.

#### (5) Desirable or scheduled time of the commencement of the Project

The proposed study needs to be commenced in the early month of FY. 1995 so as to start the construction works for irrigation development in the early stage of Repelita VI.

#### (6) Expected funding source and/or assistance

The Government of Indonesia expects the financial assistance from Japan for the development of priority schemes.

#### (7) Other relevant Project: None

### **2. Terms of Reference of the Proposed Study**

**(Refer to Attachment 1)**

### **3. Facilities and Information for the Study Team**

#### (1) Assignment of counter part personnel of the implementing agency for the Study

The implementing agency of MPW has a capacity to assign counterpart personnel corresponding to a number of Study Team members to be organized by the Government of Japan.

- (2) Information on the security conditions in the Study Area

There is no problem regarding security in Lampung Province.

#### **4. Global Issues**

- (1) Environmental components:

It is proposed to conduct an environmental study in the course of the proposed study in accordance with the Indonesian Government regulation No. 29, 1986 regarding the analysis of impacts upon the environment.

- (2) Anticipated environmental impacts by the Project:

Negative effects are predicted on water quality from the agricultural development in which intensive use of agro-chemicals would be practiced. It is necessary to assess an environmental effects of the Project in the proposed Study.

- (3) Women as main beneficiaries or not:

Women are participating in farming activities to an considerable extent, but not the main beneficiaries of the Project.

- (4) Project Components which require special considerations for women:

Women's participation in agricultural production activities.

- (5) Anticipated impacts on women caused by the Project:

More participation in agriculture production and processing activities.

- (6) Poverty reduction components of the Project:

Improvement of farmers economy through agricultural production increase.

- (7) Any constraints against the low income people caused by the Project: None

#### **5. Undertaking of the Government of Indonesia**

In order to facilitate a smooth and efficient conduct of the Study, the Government of Republic of Indonesia shall take necessary measures:

- (1) To secure the safety of the Study Team,
- (2) To permit the member of the Study Team to enter, leave and sojourn in Republic of Indonesia,
- (3) To exempt the Study Team from tax, duties and any other charges on equipment, machinery and other materials brought into and out of Republic of Indonesia for the conduct of the Study,
- (4) To exempt the Study Team from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Study Team for their services in connection with the implementation of the Study,

- (5) To provide necessary facilities to the Study Team for remittance as well as utilization of the funds introduced in the Republic of Indonesia from Japan in connection with the implementation of the Study,
- (6) To secure permission or entry into private properties or restricted areas for the conduct of the Study,
- (7) To secure permission for the study to take all data, documents and necessary materials related to the Study out of the Republic of Indonesia to Japan,
- (8) To provide medical services as needed. Its expenses will be chargeable to members of the Study Team.

6. The Government of Indonesia shall bear claims, if any arises against member(s) of the Japanese Study Team resulting from, occurring in the course of or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the member of the Study Team.

7. The Directorate General Water Resources Development (DGWRD) shall act as counterpart agency to the Japanese Study Team and also as coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.

The Government of Indonesia assured that the matters referred in this form will be ensured for a smooth conduct of the Development Study by the Japanese Study Team.

Signed:

Titled:

On behalf of the Government of Indonesia

Date:

**TERMS OF REFERENCE  
FOR  
THE OVERALL PLAN STUDY  
ON  
WEST LAMPUNG DISTRICT AND SEMANGKA RIVER BASIN  
IRRIGATION DEVELOPMENT PROJECT**

**1. Justification of the Study**

The agricultural sector in Indonesia has been playing an important role in its economy. The sector accounts for about 21% of GDP in 1989/90. In the agricultural sector, the food crop sub-sector is dominant, sharing about 52% of the agricultural GDP. Such tendency of importance of food crop, mainly of rice, will continue in the future due to the Indonesia's population growth at around 2.0% per annum.

The agriculture sector in Lampung Province is also important accounting 42% of its GRDP in 1990. The food crop sub-sector shares 48% of the agricultural GRDP in 1990 followed by farm non food crop (31%) and livestock (13%). The provincial government is making continuous efforts for the development of agriculture sector.

However, the agriculture development in West Lampung District and Semangka River Basin is backward comparing to that in other regions in the province, although the agriculture is the most important sector in these areas. Agricultural infrastructure such as irrigation facilities is insufficiently available, and accordingly agricultural productivity is low and farmers economy is poor in these areas.

In this context, It is proposed to conduct the Study firstly for the formulation of an overall irrigation development plan to identify priority irrigation schemes within the framework of development policy of the province and taking an optimum use of land and water resources into account. After the overall plan, feasibility study is proposed to be carried out for the assessment of technical and economic viability of the priority schemes. The implementation of the Study and countermeasures to be taken based on the Study will result in an improvement of such backward situation in West Lampung District and Semangka River Basin.

**2. Justification of the Japanese Technical Cooperation**

For the execution of the overall irrigation development study, it is proposed to organize a study team under the Japanese technical cooperation program. This is because of the sufficient experience of Japan in the irrigation development in South East Asia including Indonesia.

**3. Objectives of the Study**

The objectives of the proposed study are:

- 1) to prepare an overall irrigation development plan for West Lampung District and Semangka River Basin focusing on the water resources, agricultural resources, relevant agricultural infrastructures and rural living

improvements,

- 2) to select priority irrigation development schemes for the agriculture development,
- 3) to conduct a Feasibility Study for the selected irrigation development schemes, and
- 4) to carry out technology transfer to the Indonesian counterpart personnel during the Study.

#### **4. Area to be Covered by the Study**

The study covers West Lampung District and Semangka River Basin with an approximate area of 5,905 km<sup>2</sup>, 4,950 km<sup>2</sup> n for West Lampung District and 955 km<sup>2</sup> Semangka River Basin.

#### **5. Scope of the Study**

In order to achieve the above objectives, the Study will be carried out during the total period of seventeen (17) months and consist of two (2) phases and the following items.

##### **Phase-I: Overall Plan Study**

- 1.1 Collection and review of existing data and information and field survey on the following items:
  - 1) Natural condition; topography, meteorology, hydrology, geology, soil, etc.,
  - 2) Social condition; population, social organization, sanitation, employment, socio-economy, land tenure, etc.,
  - 3) Agriculture and livestock; farming practices, land use, cultivation, crop unit yields, agricultural extension, etc.,
  - 4) Agricultural infrastructures; irrigation and drainage, farm road, agro-processing facilities, marketing facilities, etc.,
  - 5) Agro-economy; marketing, investment, crop productivity, finance, processing, farmers organization, farmers economy, etc.,
  - 6) Social infrastructures; transportation, domestic water, rural electrification, etc., and
  - 7) Environmental aspects.
- 1.2 Evaluation on the available land and water resources.
- 1.3 Review of the existing development plans and projects in the study area.
- 1.4. Formulation of an overall irrigation development plan which consists of:
  - 1) Establishment of basic development plan,

- 2) Establishment of land and water resources development plan,
- 3) Sector and area-wise identification of the priority schemes for the irrigation development

### Phase II: Feasibility Study

- 2.1 Collection of data and information for the selected priority schemes through additional field survey,
- 2.2 Formulation of irrigated agricultural development plan for each selected priority schemes,
- 2.3 Preparation of a preliminary design for the major facilities,
- 2.4 Preparation of the project implementation plan,
- 2.5 Estimate of the project costs and benefits,
- 2.6 Evaluation of the project,
- 2.7 Preparation of recommendations for the project.

## **6. Study Schedule**

The study will be carried out within 17 months as given in the attached tentative schedule.

The study will require in total 100 M/M of experts. Required input M/M of each expert is as follows;

<u>Expertise</u>	
1) Team Leader	8
2) Irrigation Engineer	14
3) Land Use Planner	8
4) Hydrologist	10
5) Agronomist	10
6) Agro-economist	12
7) Pedologist	4
8) Geologist	6
8) Rural Planner/Sociologist	8
9) Irrigation Planning/Design Engineer	8
10) Project Economist	6
11) Environmentalist	6
<u>Total</u>	<u>100</u>

## **7. Expected Major Outputs of the Study**

Major outputs of the study are expected to be: i) overall irrigation development plan for West Lampung District and Semangka River Basin optimizing the land and water resources and ii) implementation program of the priority irrigation schemes.

**The study results will appear in the following reports and be submitted to the Government of Indonesia.**

- 1) Inception Report : Twenty (20) copies at the commencement of the Phase-I field work,
- 2) Progress Report (I) : Twenty (20) copies at the end of Phase-I field work,
- 3) Interim Report : Twenty (20) copies at the commencement of the Phase-II field work,
- 4) Progress Report (II) : Twenty (20) copies at the end of Phase-II field work,
- 4) Draft Final Report : Twenty (20) copies at the end of the Phase-II home office work,
- 5) Final Report : Fifty (50) copies within two months after the receipt of the GOI's comments on the Draft Final Report.



## Tentative Work Schedule

Item	Month																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Work in Indonesia																	
Work in Japan																	
Submission of Report	▲ ICR			▲ PR(1)			▲ ITR				▲ PR(2)				▲ DFR		▲ FR
Phase	← Phase I						→	← Phase II							→		

(Note) ICR: Inception Report  
 PR(1): Progress Report (I)  
 ITR: Interim Report  
 PR (2): Progress Report (II)  
 DFR: Draft Final Report  
 FR: Final Report

## 添付資料－3

マレーシア国

園芸作物流通システム改善計画調査実施のためのTOR（案）

**Application for the  
Technical Cooperation (Development Study)  
by the Government of Japan**

**1. Project Digest**

**(1) Project Title:**

Feasibility Study on Improvement and Development of Horticulture Marketing System in Malaysia

**(2) Location:**

Whole Malaysia (**Refer to Attachment 1**)

**(3) Implementing Agency:**

- Name; Federal Agricultural Marketing Authority (FAMA) as the main implementing agency and Department of Agriculture (DOA) under the Ministry of Agriculture (MOA)
- Number of Staff of the Main Implementing Agency; 2,083 staff in total comprising 88 permanent professional and management staff, 1,496 permanent supporting staff, 346 temporary staff and 53 project staff as at October, 1993.
- Budget allocated to the Agency; Under the Six Malaysia Plan (6MP, 1991-1995), the budget allocated to FAMA amounts to RM 246 million comprising development expenditure of RM 73 million and management expenditure of RM 173 million.
- Organization chart; (**Refer to Attachment 2**)

**(4) Justification of the Project**

- Present conditions of the sector: Agriculture, forestry and fishing sector contributed to 15.8% of GDP for 1993 and is expected to share 15% of the total GDP of RM 108,746 million for 1994.
- Sectoral development policy of the Government: The revised National Agricultural Policy was launched in February, 1993 incorporating the new development philosophy and direction as embodied in the Second Perspective Plan and Vision 2020. The NAP foresees the creation of a dynamic and vibrant agricultural sector comprising of efficient agribusiness, farms and enterprises, the growth of which will be based on a rapid pace of innovation in products and processes, productivity increases and expanded technological diffusion.
- Problems to be solved in the sector: Apart from supply side constraints such as increased labor shortages, wage increases for important farm operation, increasing cost of new land development and limited technological options, there are many constraints in the agricultural marketing system such as price instability, seasonal in supply and demand, high marketing costs and margins, and lack of grades and standards for produce, high degree of post-harvest losses, and lack of adequate market information.

- Outline of the Project: The Project aims to improve and develop the marketing system of horticulture produce, fresh and processed, under the MOA's purview including vegetables, fruits and flowers through the implementation of the pilot projects to practice modernization of market infrastructures and development of marketing agents and entrepreneurs. The Project also assesses FAMA's roles and functions in improvement and development of marketing system for the target produce.
- Purpose (short-term objective) of the Project: The purpose of the Project is to draw up an implementation program integrating three components of the marketing chain, namely supply, demand and market networks focusing upon establishment of market information system, development of market and agro-based industries, fostering of good marketing practice, promotion of farmers' participation in direct marketing, modernization of trading practices, and rationalization of agency-industry cooperation.
- Goal (long-term objective) of the Project: The goal of the Project is to overcome the constraints prevailing both in production and marketing of horticulture produce and to meet the challenges in the 1990s in the marketing of such produce paying special attention to maximization of on-farm returns through improvement of the marketing system, development of agro-processing and implementation of human resource development program for creating new commercial and dynamic producers and entrepreneurs.
- Prospective beneficiaries: The Project is expected to benefit two large groups: the one is smallholders and commercial producers involved in production and processing activities, traders and marketing agents including wholesalers and retailers, and consumers; the other is planning and policy making agencies such as MOA and FAMA.
- The Project's priority in the NAP: To achieve the objectives of the NAP, the priority is given to reform marketing system as one of the six strategies to be implemented under the NAP. Great emphasis is put upon immediate solution of issues related to market access, competition, market shares, prices and trade practices through an integrated approach combining demand and supply aspects and by creating conditions for market transparency. In the NAP, acceleration of agro-based industries development is also essential ingredients among the six strategies to achieve the target. Further promotion of downstream development such as marketing system of processed products will therefore play an important role in implementing this strategy.

(5) Desirable time of the commencement of the Project:

The pilot projects is anticipated to be implemented under the Seventh Malaysia Plan (1996 - 2000). Accordingly, the proposed Development Study needs to be commenced in the early month of 1995 so as to complete drawing up of the implementation program of the pilot projects by 1996.

(6) Expected funding source and/or assistance:

The Malaysian Government's budget is expected funding source and also the Japanese Government's technical assistance to implement the pilot projects is expected.

(7) Other relevant Project: None

## **2. Terms of Reference of the Proposed Study**

**(Refer to Attachment 3)**

## **3. Facilities and Information for the Study Team**

- (1) Assignment of counterpart personnel of the implementing agency for the Study:

**(Refer to Attachment 4)**

- (2) Available data, information, documents and maps related to the Study:

**(Refer to Attachment 5;)**

- (3) Information on the security conditions in the Study Area:

There is no problem regarding security throughout the country.

## **4. Global Issues**

- (1) Environmental components of the Project:

Handling of garbage and disposal in markets.

- (2) Anticipated environmental impacts by the Project:

Improvement of market infrastructures is expected to contribute to reduction of volume and handling cost of garbage and disposal.

- (3) Women as main beneficiaries or not:

Women are participating in production and marketing activities to an considerable extent but not the main beneficiary of the Project.

- (4) Project components which require special considerations for women:

Women's participation in producing, processing and marketing activities.

- (5) Anticipated impacts on women caused by the Project:

Encourage quality products, fresh and processed, as well as further participation in direct marketing activities.

- (6) Poverty reduction components of the Project:

Maximization of on-farm returns to producers.

- (7) Any constraints against the low income people caused by the Project: None

## **5. Undertaking of the Government of Malaysia**

In order to facilitate a smooth and efficient conduct of the Study, the Government of Malaysia shall take necessary measures:

- (1) To inform the members of the Study Team any existing risk in the Study area and to

- take any measures deemed necessary to secure the safety of the Study team;
- (2) To ensure the necessary entry permits for the Study Team to conduct field surveys in Malaysia and exempt them from consular fees;
  - (3) To exempt the members of the Study team from taxes and duties, as normally accorded under the provision of Malaysia General Circular No. I of 1979, on equipment, machinery and other materials brought into and out of Malaysia for the conduct of the Study;
  - (4) To exempt the non-Malaysian members of the Study team from Malaysian income tax on their official emoluments in respects of their period of assignment in Malaysia in connection with the conduct of the Study while retaining the right to take such emoluments into account for the purpose of assessing the amount to be applied to income from other sources;
  - (5) To provide necessary facilities to the Study Team for the remittance as well as the utilization of funds introduced into Malaysia from Japan in connection with the implementation of the study;
  - (6) To secure permission for entry into private properties or restricted areas for the implementation of the Study;
  - (7) To make arrangements for the Study Team to take back Japan the data, maps and other materials connected with the Study, subject to the approval of the Government of Malaysia, in order to prepare the reports;
  - (8) To provide the Study Team with medical services when needed, the expenses of which shall be chargeable to the members of the Study team; and
  - (9) To secure clearance for the use of communication facilities including transceivers.
6. The Government of Malaysia shall indemnify any member of the Study Team in respect of damages arising from any legal action against him in relation of any act performed or omissions made in undertaking the Study except when the both Governments agree that such a member is guilty of gross negligence of willful misconduct.
7. The Federal Agricultural Marketing Authority (hereinafter referred to as FAMA) shall act as a counterpart agency of the Study Team and also as a coordinating body in relation with other relevant organizations for the smooth implementation of the Study.

The Government of Malaysia assured that the matters referred in this form will be ensured for a smooth conduct of the Development Study by the Japanese Study Team.

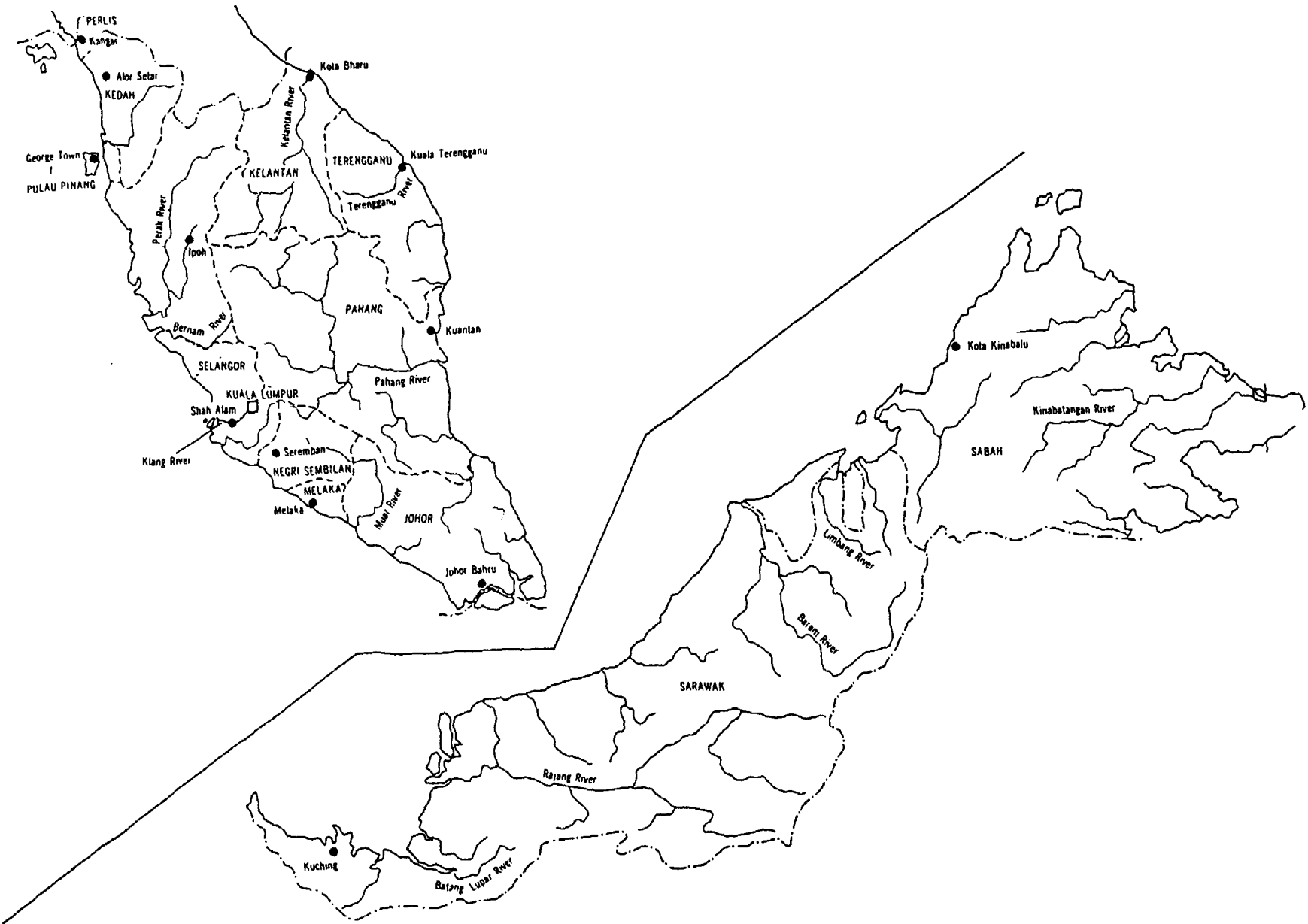
Signed:

Titled:

On behalf of the Government of Malaysia

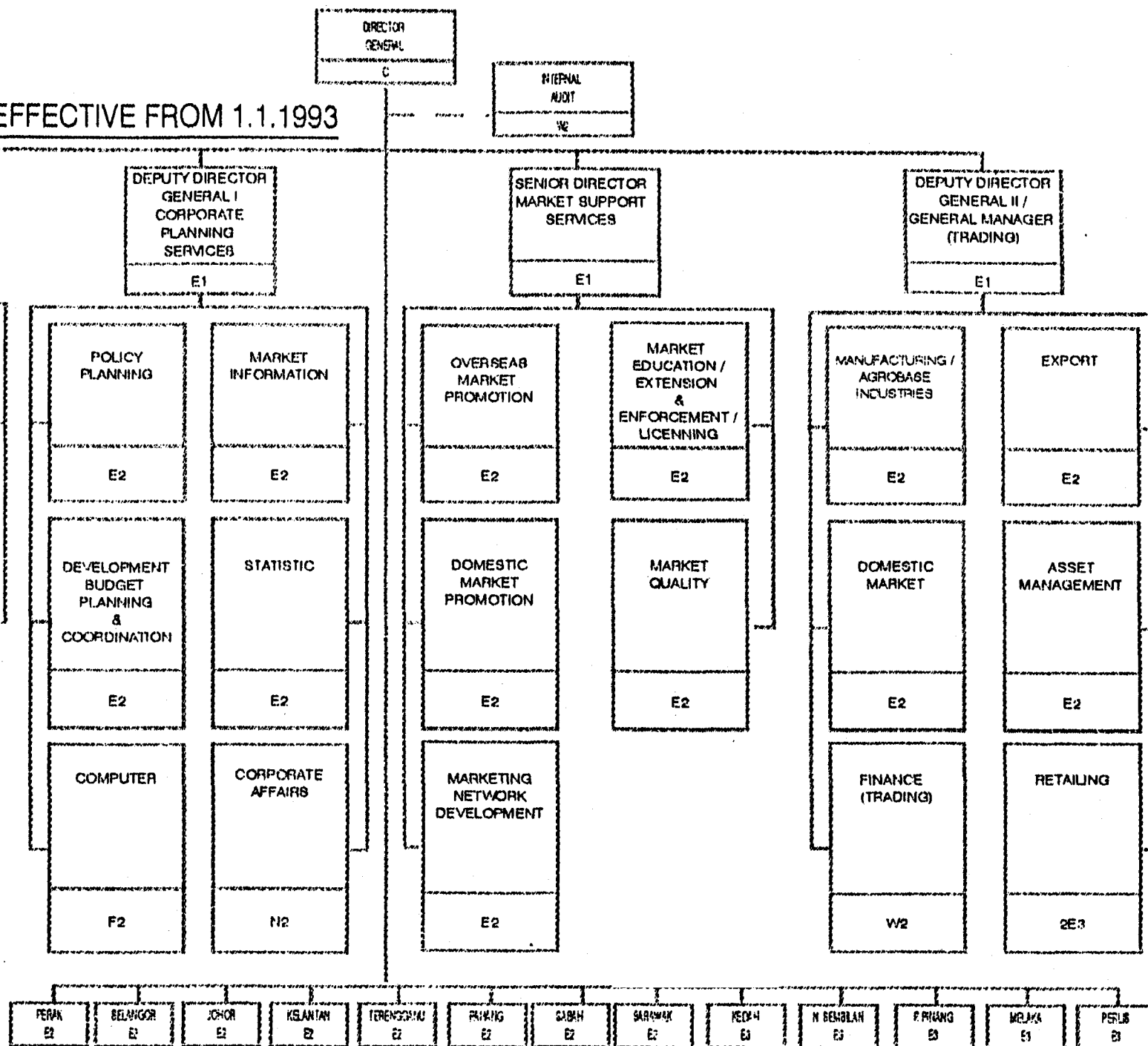
Date:

Location Map of FAMA's State Office



# FAMA NEW STRUCTURE - EFFECTIVE FROM 1.1.1993

C-6





**TERMS OF REFERENCE  
FOR  
THE FEASIBILITY STUDY  
ON  
IMPROVEMENT AND DEVELOPMENT  
OF HORTICULTURE MARKETING SYSTEM  
IN MALAYSIA**

**NECESSITY OF THE STUDY**

**Role of Agriculture**

1. In Malaysia, agriculture has declined in its contribution to the nation's Gross Domestic Product (GDP) over the last 10 years from 22.9% in 1980 to 18.7% in 1990 due mainly to faster growth of the manufacturing sector. In the Second Outline Perspective Plan (1991-2000), the agricultural sector is expected to remain as an important sector in the development of the national economy with a sustainable increase in earnings from RM 14,829 million in 1990 to RM 20,820 million in 2000, although its contribution to the GDP is projected to decline further to 13.4% in 2000.
2. The main objective of the National Agricultural Policy (NAP, 1992-2010) is to maximize income through optimal utilization of resources with specific aims to achieve a balanced development between the agriculture and manufacturing sectors, to enhance the integration of the agriculture sector with the manufacturing sector, and to achieve a higher level and greater depth of food industry development. The development strategies to be pursued under the NAP include: institutional development; human resource development; mechanization and automation; modernization and commercialization of smallholders production; intensification of research and development; agro-based processing and expanded integration with the manufacturing and service sectors; and aggressive global marketing.
3. From the above strategic viewpoints, the continuation of agricultural diversification promotion is the main thrust in Malaysia's agricultural development program. The commodities that came under the perspective of the agricultural development program in the mid-eighties were fruits, vegetables, flowers, livestock and aquaculture. The rate of growth in the horticulture sub-sector was 0.4%, -1.2% and 3.1% over the Third, Fourth and Fifth Malaysia Plans, respectively. Of livestock production, poultry attained the highest growth rate of 7.9% followed by dairy of 7.4% in the Fifth Malaysia Plans. Under the Sixth Malaysia Plan, the annual growth rate of production is expected to be 8.4% for the horticulture, 8.8% for the poultry and 14.8% for the dairy, while that of the agriculture sector is estimated to be 3.5% as a whole. In this respect, these three products are expected to play an increasingly important role in the development of the agriculture sector, particularly in the improvement of smallholders' economy in non-paddy areas of the country, over the next decade.

**Needs for Horticulture Marketing Improvement and Development**

4. The marketing system is the final arbiter of all agricultural activities needed to support agricultural diversification and to accelerate horticultural development in the country. It covers market promotions, transport facilities, packaging and general product presentation techniques, and market information on quality and quantity needs to ensure that the products

are efficiently marketed. The Federal Agricultural Marketing Authority (FAMA) established in 1965 is a statutory body under the Ministry of Agriculture with a view to supervise, coordinate and improve such marketing system in terms of horticulture produce as well as livestock, freshwater fish and other agricultural products except primary commodity crops.

5. The agricultural marketing system in Malaysia still suffers from such deficiencies as price instability, seasonally in supply and demand, high marketing costs and margins, and lack of grades and standards for produce, high degree of post-harvest losses, and lack of adequate market information. In production side, there also exist constraints such as small and scattered nature of production, high cost and inconsistency of supply, variation in quality of the produce, and low production level due to the predominance of smallholders in horticulture.

6. To overcome these constraints prevailing both in production and marketing fields and to meet the challenges in the 1990s in the marketing of horticultural products, it is prerequisite:

- (1) To promote horticultural growth by marketing horticultural products to meet domestic requirement and to exploit overseas demand for fresh and processed products; and
- (2) To maximize on-farm returns to products through improvement of the marketing system both in terms of effectiveness and efficiency, and through development of agro-processing to increase the value added to agricultural products.

7. The principal strategy to evolve an effective and efficient market system of horticultural produce is to integrate three components of the marketing chain, namely supply, demand and market networks. In support of this strategy, implementation of the following programmes is urgently needed: establishment of market information system; development of market and agro-based industries; fostering of good marketing practice; promotion of farmers in direct marketing; modernization of trading practices; and rationalization of agency-industry cooperation. In implementing these programmes, FAMA will have to be directly involved as the authority and premier government agency dealing with the marketing of horticulture produce and is responsible for drawing up an implementation programme covering technical, institutional and financial issues of the horticulture marketing in a comprehensive manner.

## **NECESSITY OF THE JAPANESE TECHNICAL COOPERATION**

8. In order to conduct the proposed feasibility study covering technical, institutional and financial issues of the horticultural product marketing in a comprehensive manner, it is prerequisite to organize a multi-disciplinary study team under the Japanese technical cooperation program.

9. As FAMA will have to be directly involved in implementing these programs as the leading government agency dealing with the marketing of horticultural produce, FAMA will assume the principal role in cooperating the Japanese study team among agencies concerned of MOA.

## **OBJECTIVES OF STUDY**

10. The objectives of the proposed Study are to examine the development potential of horticulture sub-sector in Malaysia from the marketing viewpoints and to formulate short to

long term implementation plans for improvement of the existing marketing system of horticultural produce from production to consumption segments. The Study aims:

- (1) To review the existing marketing system of horticulture produce from producing to consuming stages with the view of determining the present conditions and also identifying improvement and development options in relation to the above-mentioned strategic programs and other related issues;
- (2) To evaluate market potential of traditional and new horticultural products, fresh to processed, in both domestic and overseas markets;
- (3) To identify potential products through assessment of investment returns and internal and international market competitiveness;
- (4) To assess technical and economical feasibility on improvement and development options of marketing system of horticultural produce so as to put priority ranking in implementing the options;
- (5) To study organizational and legal issues to develop modern and systematic agricultural market structure;
- (6) To establish guidelines for planning, designing and operation of modern and systematic wholesale markets of the target produce as well as to recommend the followings:
  - the schedule of implementation of the new wholesale market system, and
  - the role of FAMA and other related agencies to control and manage the wholesale market paying special attention to how to get entry into the system to create a competitive market;
- (7) To prepare action programs to implement improvement and development measures for marketing system of the target produce;

## **AREA TO BE COVERED BY THE STUDY**

11. The Study covers Peninsular Malaysia, Sabah and Sarawak where FAMA provides its services.

## **SCOPE OF WORK**

12. The Study shall comprise two phases, namely Phase I and Phase II.

### **Phase I Study**

13. The Phase I Study shall be focused on overall review of the present marketing system of the horticulture sub-sector in the country as well as domestic and foreign market potential of Malaysia's horticultural products. Subsequent study shall be made to identify and formulate improvement and development options in the respective stages from upstream to downstream of the marketing system together with cost and benefit estimates as well as to establish a comprehensive plan showing a framework for improvement and development of the horticulture marketing system.

14. Major study items under the Phase I are:

- (1) To compile and review available data and information on the present marketing system of the horticulture sub-sector covering the following issues and carry out investigations if necessary;
  - horticulture production system and cultivation practices,
  - post-harvesting conditions,
  - transport, depot/storage and other market facilities and network with current utilization conditions as well as those linkage with distribution outlets at the consumption level,
  - packaging and general product presentation techniques at farm and wholesale levels including collecting, cleaning, grading, packing and storing activities,
  - activities of collectors, middlemen, traders, buyers, processors and wholesalers/retailers,
  - activities of related services sector. such as information services, forwarding agents, transport services, retailing services and restaurants,
  - activities of agro-based processing industries,
  - activities of farmers and farmer's associations in terms of their participation in marketing at wholesale and retail levels,
  - marketing cost and margin with pricing mechanism,
  - market promotions,
  - market information on quality and quantity needs as well as supply and price,
  - market's incentives to farmers and consumers' behavior,
  - organizational and institutional aspects including role, function and involvement in marketing activities of FAMA and other relevant agencies,
  - legal issues on marketing system, and
  - management system of procurement and sales.
- (2) To collect, compile and review available information and data on market potential of the horticulture sub-sector in domestic and overseas markets covering the following;
  - present and projected production figures of horticulture produce by commodity and by administrative division,
  - present and projected data of marketed, post-harvest loss and exported/imported volumes and values by commodity,
  - present and projected costs for production and marketing and returns from investment, and

- short to long term demand and price forecast in domestic and overseas markets.
- (3) To evaluate processing capacity of food-based industries with marketing capability of their products,
  - (4) To identify constraints prevailing in the present marketing system of horticulture produce and recommend remedied measures to overcome these constraints;
  - (5) To evaluate market potential by commodity and identify new horticulture products of fresh and processed, and prospective markets, locally or overseas, for promotion of these products;
  - (6) To identify improvement and development options for the present marketing system of the horticulture sub-sector and formulate alternative plans for these options with cost and benefit estimates paying special attention to the following;
    - improvement of market information system,
    - promotion of marketing system development by introducing auction and franchise systems,
    - contribution to agro-based industrial development,
    - introduction of better marketing practices,
    - encouragement of farmers' participation in direct marketing,
    - promotion of FAMA's involvement in wholesale and retail activities,
    - introduction and practice of improved transport technology,
    - establishment of most cost effective management system in purchasing and selling horticulture produce,
    - gradual reduction of restrictions on marketing of horticulture produce such as tariff and non-tariff barriers,
    - improvement of pricing mechanism for maximization of on-farm returns,
    - improvement of legal provision related to agricultural marketing, particularly concerning wholesale activities, and
    - promotion of agency-industry cooperation.
  - (7) To examine technical feasibility and economic viability of the above alternative plans in a preliminary manner and determine priority;
  - (8) To review and assess the following issues of FAMA for clarification of needs to overcome constraints and preparation of recommendations on the future direction of FAMA's involvement in marketing activities in the horticulture sub-sector;
    - *the existing strategies and policies of FAMA's involvement in marketing activities,*
    - capacity of FAMA's marketing facilities including warehouses, motor

transport and hardware of management information system,

- performance of FAMA's staff and its human resources development activities,
  - training needs of farmers and market intermediates,
  - FAMA's ability to disseminate information and knowledge to farmers and market participants,
  - FAMA's assets and financial status,
  - future directions of FAMA's responsibilities and functions with regard to FAMA's commercial approaches and corporatization focusing on: organizational structure; accounting system; remuneration and incentive scheme for workers; management information system required for decision making; the need to overcome supply problems in relation to quality, quantity and price; possibility of increasing supply through contract marketing locally and overseas; and inventory management system, and
  - better utilization of FAMA's training facilities and improvement of training programs with a view towards development of marketing agents and entrepreneurs including linkages with other marketing training centers abroad.
- (9) To draw up a master plan to improve and develop the marketing system of horticulture produce including short-, mid- and long-term package action programs.

## **Phase II Study**

15. Subject to the Malaysian Government's comments on the comprehensive master plan to be formulated by the Phase I Study, scenarios packaging the alternative improvement and development plans with high priority ranking and an implementation program of proposed pilot projects will be made in the Phase II Study.

16. Major study items under the Phase II are:

- (1) To finalize the action programs for improvement and development of the marketing system taking into consideration the Malaysian Government's comments;
- (2) To select suitable areas, commodities, market facilities and marketing activities for formulating pilot projects;
- (3) To formulate the short-term improvement and development package plan in detail to enable the pilot projects to focus on the following;
  - design, construction scheduling and cost estimate of market infrastructures,
  - design, installation scheduling and cost estimate of market information system,
  - operation and management of marketing system,
  - institutional and legal arrangement to be required for implementation of the

pilot projects including development and allocation of human resources,

- FAMA and other relevant agencies' involvement to be required,
  - social approach to how to encourage farmers and marketers, especially women, to participate in the pilot projects,
  - financial arrangement plan for implementation of the pilot projects including funding sources for improvement and development of market infrastructures, and
  - Supporting system to farmers including financing service and its fund requirement.
- (4) To prepare an optimum implementation schedule of the pilot projects;
  - (5) To analyze economic and financial impact of the pilot project implementation;
  - (6) To evaluate social and environmental effects of the pilot project implementation; and
  - (7) To establish guidelines for planning and designing of modern and systematic wholesale markets.

## **STUDY SCHEDULE**

17. The Study will be carried out in Malaysia according to the schedule as attached herewith. The duration of the Study is 20 months.

18. To disseminate information on the Study outputs to policy makers and managers, a national seminar is expected to be organized at the end of the study period. A workshop is also expected to be organized at the appropriate time of the Study to transfer technology of planning, designing, operating and managing modern and systematic wholesale markets to staff of FAMA and relevant agencies.

19. The Study Team should comprise well experienced professionals such as marketing planner, agronomist/horticulture expert, post-harvest/plant quarantine expert, marketing facilities expert, transportation expert, agro-based industry expert, management information system expert, agro-economist, sociologist, project economist, legal expert, institutional expert, and management consultancy expert.

## **MAJOR OUTPUTS OF THE STUDY**

20. Major outputs of the Study are expected to be: (1) scenarios packaging the improvement and development options for the marketing system of horticulture produce; (2) the implementation program of the pilot projects to practice modernization of market infrastructures and development of marketing agents and entrepreneurs; and (3) guidelines for planning and designing of modern and systematic wholesale markets.

21. The following reports will be prepared through the Study:

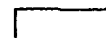
- (1) Inception Report: Thirty (30) copies at the beginning of the Phase I Study;

- (2) Progress Report: Thirty (30) copies at the middle of the Phase I Study;
- (3) Interim Report: Thirty (30) copies at the end of the Phase I Study;
- (4) Draft Final Report: Thirty (30) copies at the end of the Phase II Study comprising General Report presenting the master plan, action programs and implementation program of the pilot project, several separate volumes presenting study results for marketing of horticulture produce and one volume regarding FAMA's role in agro-based industry, market practices and other issues;
- (5) Final Report: One hundred (100) copies within two (2) months after the receipt of the Malaysian Government's comments on the Draft final Report.



TENTATIVE TIME SCHEDULE FOR THE PROPOSED FEASIBILITY STUDY ON  
MARKETING SYSTEM IMPROVEMENT AND DEVELOPMENT FOR  
FRESH AND PROCESSED HORTICULTURE AND LIVESTOCK PRODUCTS IN MALAYSIA

Work Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Preparatory Work																				
2. Phase I Study																				
(1) Collection and review of data																				
(2) Identification of development options																				
(3) Formulation of action programmes																				
3. Phase II Study																				
(1) Formulation of pilot project																				
(2) Undertaking of feasibility study																				
(3) Preparation of planning/design guidelines for establishing modern and systematic wholesale markets																				
(4) Preparation of Final Report																				
4. Reporting																				
(1) Inception Report																				
(2) Progress Report																				
(3) Interim Report																				
(4) Draft Final Report																				
(5) Final Report																				



Work in Japan



Work in Malaysia

## **ATTACHMENT 4**

**Assignment of counterpart personnel of the implementing agency for the Study**

**Counterpart personnel to be assigned by FAMA cover the following issues:**

- 1. Marketing Planning;**
- 2. Horticulture;**
- 3. Post-harvest/plant quarantine;**
- 4. Marketing facilities;**
- 5. Transportation;**
- 6. Management information system;**
- 7. Manpower development and training; and**
- 8. Market economy.**

**Counterpart personnel to be assigned from DOA, DVS and Malaysian Agricultural Research and Development Institute (MARDI) cover the following issues:**

- 1. Crop production;**
- 2. Agro economy**
- 3 Agro-processing**

List of Information and documents related to the Study available in FAMA

KERTAS KAJIAN

Potensi Pasaran Bagi Barangan Terpilih 91/92, Jilid 1  
Potensi Pasaran Bagi Barangan Terpilih 91/92, Jilid 11  
Potensi Pasaran Bagi Barangan Terpilih 91/92, Jilid 111  
Laporan Kajian-Tingkah laku Pengguna Susu 1990  
Laporan Kajian-Kajian Penggunaan Barangan Terpilih Bagi Institusi 1990/1991  
Laporan-Kajian Penilaian Kempen Ikan Air Tawar Tahun 1990 (Peringkat Penjual)  
Laporan Kajian-Kajian Penilaian Pasar Tani (Peringkat Pengguna) 1991  
Laporan Kajian-Kempen Ikan air Tawar Tahun 1990 (Peringkat Pengguna)  
Warta Barangan-Harga Barangan Pertanian Terpilih 1990 Jld. 1  
Warta Barangan-Harga Barangan Pertanian Terpilih 1990 Jld. 11  
Warta Barangan-Harga Barangan Pertanian Terpilih 1991 Jld. 11  
Laporan Kajian-Kajian Permintaan Bahan Mentah Bagi Kilang Memproses 1990  
Laporan Kajian-Kajian Penilaian Pasar Tani 1991 (Peringkat Peserta)  
Laporan Kajian-Kajian Permintaan Bahan Mentah Bagi Kilang Memproses 1991/92  
Laporan Kajian-Sayur-sayuran Tanah Tinggi Sabah  
Laporan Kajian-Kajian Penggunaan barangan Terpilih Bagi Indtitusi 1991/92 Jld. 1  
Laporan Kajian-Kajian Penggunaan Barangan Terpilih Bagi Institusi 1991/92 Jld. 11  
Laporan-Kajian Penilaian Kempen Memakan Ikan Air Tawar 1992 (Peringkat Pengguna)  
Warta Barangan-Harga Barangan Pertanian Terpilih 1992 Jld.1  
Warta Barangan-Harga Barangan Pertanian Terpilih 1992 Jld.2  
Laporan-Kajian Kos Dan Margin Buah-Buahan Tempatan Tahun 1992  
Data Siri Masa Buah-Buahan 1982-1991  
Data Siri Masa Sayur-sayuran 1982-1991

## **KERTAS KERJA**

**Export Marketing Management of Fruits**

**Carriage of Frozen and Fresh Goods: A Ship Owner View Point**

**Export Incentives for Fresh Fruits and Flowers**

**Airfreighting of Fruits and Flowers**

**Teknologi Pengendalian Buah-Buahan Segar untuk Eksport**

**Export Marketing Management of Flowers**

**Market Potential for Agricultural Produce**

**Prospect and Potential of Tropical Fruits Juice in the International Market**

**Experiance and Problems of the Floriculture Industry**

**Pasaran Bunga-Bunga Di Hong Kong dan Jepun**

**Grading Of Belimbing For The Export Market**

**Status dan Prospek Pasaran Buah-Buahan Malaysia di Negara Sweden**

**Prospek Industri Kopi Malaysia**

**The Malaysian Experience in Developing A Market Information System for Horticulture Products**

**Packaging Technology of Flowers for Export**

**Quarantine Procedures for the Export of Fruits and Flowers**

**Statistical Brief on Floriculture**

**Statistical Brief on Fresh and Processed Fruits**

**Marketing of Chilli-Problems and Strategies**

**Pasaran Buah-Buahan Tropika Di Netherlands, Tujuan mengenai Pasaran Buah-Buahan Terpilih Dari Malaysia**

**Potensi Pengeluaran Hasil Dari Ciku**

**Improving Productivity in the Fresh Fruit Industry through Planting Materials and Field, Evaluation For Top-Plant's Tissue Cultural Pisang Mas**

**Status Dan Prospek Pasaran Buah-Buahan Tropika di Kanada**

**Pemasaran Buah-Buahan Yang Diproses, Potensi Untuk Buah-Buahan Kering Beku (Freeze Dry)**

**Pemasaran Buah Durian Dan Produk Durian sehingga tahun 2000 - satu perspektif**

Sources of Raw Materials for the Jam Manufacturing Industry  
 Floricultural Industry in Malaysia - Market Potential and Marketing Aspects  
 Peranan Kuota Dalam Industri Kopi  
 Status Dan Potensi Pemasaran Betik Dan Ciku  
 Teknologi penanaman betik: Status dan masalah  
 Pengalaman penanaman betik secara komersial  
 Teknologi penanaman ciku: Status dan masalah  
 Sistem pengendalian lepas tuai betik  
 Status ekonomi pengeluaran betik dan ciku di Malaysia  
 Masalah para pengeksport buah-buahan  
 Sistem pengendalian lepas tuai ciku  
 Pengalaman penanaman ciku secara komersial  
 Sekim kemudahan pembiayaan semula kredit eksport untuk buah-buahan  
 Market Potential For Horticultural produce  
 Local consumer preference Of Fresh Cut Flowers  
 Production Of Fresh Cut Flowers Issues & Strategies  
 Penetrating the Fresh Cut Flower Market in South Kore: Strategies and Challenges  
 Penetrating The Fresh Cut Flower Market In Taiwan: Strategies And Challenges  
 Export Trends for Fresh Orchids  
 Export Trends for Fresh Highland Flowers  
 Post-Harvest handling of Malaysian Fresh Cut Flowers  
 Marketing Strategies to Increase Domestic Consumption Of Fresh Cut Flowers  
 Fumigation of Malaysian Fresh Cut Flowers for Export Markets  
 Quarantine Requirements for Export Of Fresh Cut Flowers to Taiwan  
 Export Development Support at Country and Enterprise Level of Fruit Juices (ITC)  
 Perangkaan Perdagangan Luar Buah-buahan 1988-1992  
 Potensi Pemasaran Produk-produk Hortikultur Di Singapura  
 The Orchid Industry in Malaysia - Market Potential and Marketing Aspects

The Fruit Industry in Malaysia - Market Potential and Marketing Aspects

Penyelidikan Pengeksportan Buah-buahan Dengan Kapal Laut

Market Prospects for Malaysian Tropical Fruits in Western Europe with Particular Reference to the Netherlands and How New Malaysia Exporters Can Tap This Market Opportunity

Horticulture Marketing - Key Issues and Strategies

Perangkaan Perdagangan Luar Bunga-bunga 1988-1992

### PENGENDALIAN LEPAS TUAI

Pengendalian Dan Pemasaran Ikan Air Tawar

Pemasaran Dan Pengendalian Lepas Tuai Belimbing

Pengendalian Lepas Tuai Bunga-Bunga Keratan

Pengendalian Untuk Pemasaran Ikan Hiasan

Pengendalian Pascatuai Untuk Pemasaran Bunga Keratan (Orkid)

### BEKALAN KOMODITI

Bekalan Komoditi - Maklumat Suku Tahun Pertama 1990

Senarai Pengusaha Ikan Hiasan

Maklumat Suku Tahun Pertama 1990 - Ikan Air Tawar

Senarai pengeluaran Hortikultur Negeri Johor

Senarai Pengeluaran Hortikultur Negeri Selangor

Senarai Pengeluaran Hortikultur Negeri P.Pinang

Senarai Pengeluaran Hortikultur Negeri Melaka

Senarai Pengeluaran Hortikultur Negeri Sembilan

Senarai Pengeluaran Hortikultur Negeri Pahang

Senarai Pengeluaran Hortikultur Negeri Kelantan

Senarai Pengeluaran Hortikultur Negeri Perak

Senarai Pengeluaran Hortikultur Negeri Kedah/Perlis

Senarai Pengeluaran Hortikultur Negeri Terengganu

Tinjauan Kopi Malaysia 1990

Tinjauan Kopi Malaysia 1991/1992

Maklumat Bekalan Hortikultur Sem. Malaysia 1991

Senarai Pengeluar Bunga-bunga Tanah Tinggi

Tinjauan Pasaran Belimbing

Tinjauan Pasaran Buah-Buahan

### **RISALAH DAN RESIPI**

Malaysian Papaya Exotica (Risalah)

Malaysian Papaya Exotica (Resipi)

Malaysian Starfruits (Risalah)

Malaysian Starfruits (Resipi)

Discovering Malaysian Fruits

Malaysian Orchids (Risalah)

List of Fruits Exporters

Malaysian Pepper Exporters

Malaysian Fish Exporters

Resipi Antarabangsa

Resipi Ulam & Sayuran Tempatan

Malaysian Exotic Fruits

Orchids Of Malaysia

Malaysian Temperate Blooms

Rampai Selera Ikan Air Tawar

Resipi Buah-Buahan Dan Sayur-sayuran Tempatan

Resipi Pisang Mas

Resipi Daging Arnab

Sarawak Pepper Flavours The World (JPLH)

Risalah Tembikai

Risalah Rambutan

**Risalah Jambu Batu (Guava)**

**Risalah Manggis**

**Resipi Lada Hitam/Putih**

**Mutu Sayur-sayuran Untuk Pasaran**

**Mutu Buah-Buahan Untuk Komersial**

**Commodity Catalogue**

**Malaysian Orchids (Baru)**

**List of flowers exporters**

**Exotic Fruits Of Malaysia**



## 添付資料－4

### マレーシア国

園芸作物・畜産生産物流通システム改善計画調査実施  
のためのTOR（FAMAの原案）

**Application for the  
Technical Cooperation (Development Study)  
by the Government of Japan**

**1. Project Digest**

**(1) Project Title:**

Feasibility Study on Marketing System Improvement and Development for Fresh and Processed Horticulture and Livestock Products in Malaysia

**(2) Location:**

Whole Malaysia (**Refer to Attachment I**)

**(3) Implementing Agency:**

- Name; Federal Agricultural Marketing Authority (FAMA) as the main implementing agency and Department of Agriculture (DOA) and Department of Veterinary Services (DVS) as cooperating agencies, all under the Ministry of Agriculture (MOA)
- Number of Staff of the Main Implementing Agency; 2,083 staff in total comprising 88 permanent professional and management staff, 1,496 permanent supporting staff, 346 temporary staff and 53 project staff as at October, 1993.
- Budget allocated to the Agency; Under the Six Malaysia Plan (6MP, 1991-1995), the budget allocated to FAMA amounts to RM 246 million comprising development expenditure of RM 73 million and management expenditure of RM 173 million.
- Organization chart; (**Refer to Attachment 2**)

**(4) Justification of the Project**

- Present conditions of the sector: Agriculture, forestry and fishing sector contributed to 15.8% of GDP for 1993 and is expected to share 15% of the total GDP of RM 108,746 million for 1994.
- Sectoral development policy of the Government: The revised National Agricultural Policy was launched in February, 1993 incorporating the new development philosophy and direction as embodied in the Second Perspective Plan and Vision 2020. The NAP foresees the creation of a dynamic and vibrant agricultural sector comprising of efficient agribusiness, farms and enterprises, the growth of which will be based on a rapid pace of innovation in products and processes, productivity increases and expanded technological diffusion.
- Problems to be solved in the sector: Apart from supply side constraints such as increased labor shortages, wage increases for important farm operation, increasing cost of new land development and limited technological options, there are many constraints in the agricultural marketing system such as price instability, seasonal in supply and demand, high marketing costs and margins, and lack of grades and standards for produce, high degree of post-harvest losses, and lack of adequate market information.
- Outline of the Project: The Project aims to improve and develop the marketing system of the target produce, fresh and processed, under the MOA's purview including vegetables, fruits, flowers, coconut, coffee, poultry and dairy through the

implementation of the pilot projects to practice modernization of market infrastructures and development of marketing agents and entrepreneurs. The Project also assesses FAMA's roles and functions in improvement and development of marketing system for the target produce.

- Purpose (short-term objective) of the Project: The purpose of the Project is to draw up an implementation program integrating three components of the marketing chain, namely supply, demand and market networks focusing upon establishment of *market information system, development of market and agro-based industries*, fostering of good marketing practice, promotion of farmers' participation in direct marketing, modernization of trading practices, and rationalization of agency-industry cooperation.
- Goal (long-term objective) of the Project: The goal of the Project is to overcome the constraints prevailing both in production and marketing of the target produce and to meet the challenges in the 1990s in the marketing of such produce paying special attention to maximization of on-farm returns through improvement of the marketing system, development of agro-processing and implementation of human resource development program for creating new commercial and dynamic producers and entrepreneurs including woman power.
- Prospective beneficiaries: The Project is expected to benefit two large groups: the one is smallholders and commercial producers involved in production and processing activities, traders and marketing agents including wholesalers and retailers, and consumers; the other is planning and policy making agencies such as MOA, FAMA and relevant agencies like DOA and DVS.
- The Project's priority in the NAP: To achieve the objectives of the NAP, the priority is given to reform marketing system as one of the six strategies to be implemented under the NAP. Great emphasis is put upon immediate solution of issues related to market access, competition, market shares, prices and trade practices through *an integrated approach combining demand and supply aspects and by creating conditions for market transparency*. In the NAP, acceleration of agro-based industries development is also essential ingredients among the six strategies to achieve the target. Further promotion of downstream development such as marketing system of processed products will therefore play an important role in implementing this strategy.

(5) Desirable time of the commencement of the Project:

The pilot projects is anticipated to be implemented under the Seventh Malaysia Plan (1996 - 2000). Accordingly, the proposed Development Study needs to be commenced in the early month of 1995 so as to complete drawing up of the implementation program of the pilot projects by 1996.

(6) Expected funding source and/or assistance:

The Malaysian Government's budget is expected funding source and also the Japanese Government's technical assistance to implement the pilot projects is expected.

(7) Other relevant Project: None

**2. Terms of Reference of the Proposed Study**

**(Refer to Attachment 3)**

### **3. Facilities and Information for the Study Team**

- (1) Assignment of counterpart personnel of the implementing agency for the Study:

**(Refer to Attachment 4)**

- (2) Available data, information, documents and maps related to the Study:

**(Refer to Attachment 5;)**

- (3) Information on the security conditions in the Study Area:

There is no problem regarding security throughout the country.

### **4. Global Issues**

- (1) Environmental components of the Project:

Handling of garbage and disposal in markets.

- (2) Anticipated environmental impacts by the Project:

Improvement of market infrastructures is expected to contribute to reduction of volume and handling cost of garbage and disposal.

- (3) Women as main beneficiaries or not:

Women are participating in production and marketing activities to an considerable extent but not the main beneficiary of the Project.

- (4) Project components which require special considerations for women:

Women's participation in producing, processing and marketing activities.

- (5) Anticipated impacts on women caused by the Project:

Encourage quality products, fresh and processed, as well as further participation in direct marketing activities.

- (6) Poverty reduction components of the Project:

Maximization of on-farm returns to producers.

- (7) Any constraints against the low income people caused by the Project: None

### **5. Undertaking of the Government of Malaysia**

In order to facilitate a smooth and efficient conduct of the Study, the Government of Malaysia shall take necessary measures:

- (1) To inform the members of the Study Team any existing risk in the Study area and to take any measures deemed necessary to secure the safety of the Study team;
- (2) To ensure the necessary entry permits for the Study Team to conduct field surveys in Malaysia and exempt them from consular fees;
- (3) To exempt the members of the Study team from taxes and duties, as normally accorded

under the provision of Malaysia General Circular No. I of 1979, on equipment, machinery and other materials brought into and out of Malaysia for the conduct of the Study;

- (4) To exempt the non-Malaysian members of the Study team from Malaysian income tax on their official emoluments in respects of their period of assignment in Malaysia in connection with the conduct of the Study while retaining the right to take such emoluments into account for the purpose of assessing the amount to be applied to income from other sources;
  - (5) To provide necessary facilities to the Study Team for the remittance as well as the utilization of funds introduced into Malaysia from Japan in connection with the implementation of the study;
  - (6) To secure permission for entry into private properties or restricted areas for the implementation of the Study;
  - (7) To make arrangements for the Study Team to take back Japan the data, maps and other materials connected with the Study, subject to the approval of the Government of Malaysia, in order to prepare the reports;
  - (8) To provide the Study Team with medical services when needed, the expenses of which shall be chargeable to the members of the Study team; and
  - (9) To secure clearance for the use of communication facilities including transceivers.
6. The Government of Malaysia shall indemnify any member of the Study Team in respect of damages arising from any legal action against him in relation of any act performed or omissions made in undertaking the Study except when the both Governments agree that such a member is guilty of gross negligence of willful misconduct.
  7. The Federal Agricultural Marketing Authority (hereinafter referred to as FAMA) shall act as a counterpart agency of the Study Team and also as a coordinating body in relation with other relevant organizations for the smooth implementation of the Study.

The Government of Malaysia assured that the matters referred in this form will be ensured for a smooth conduct of the Development Study by the Japanese Study Team.

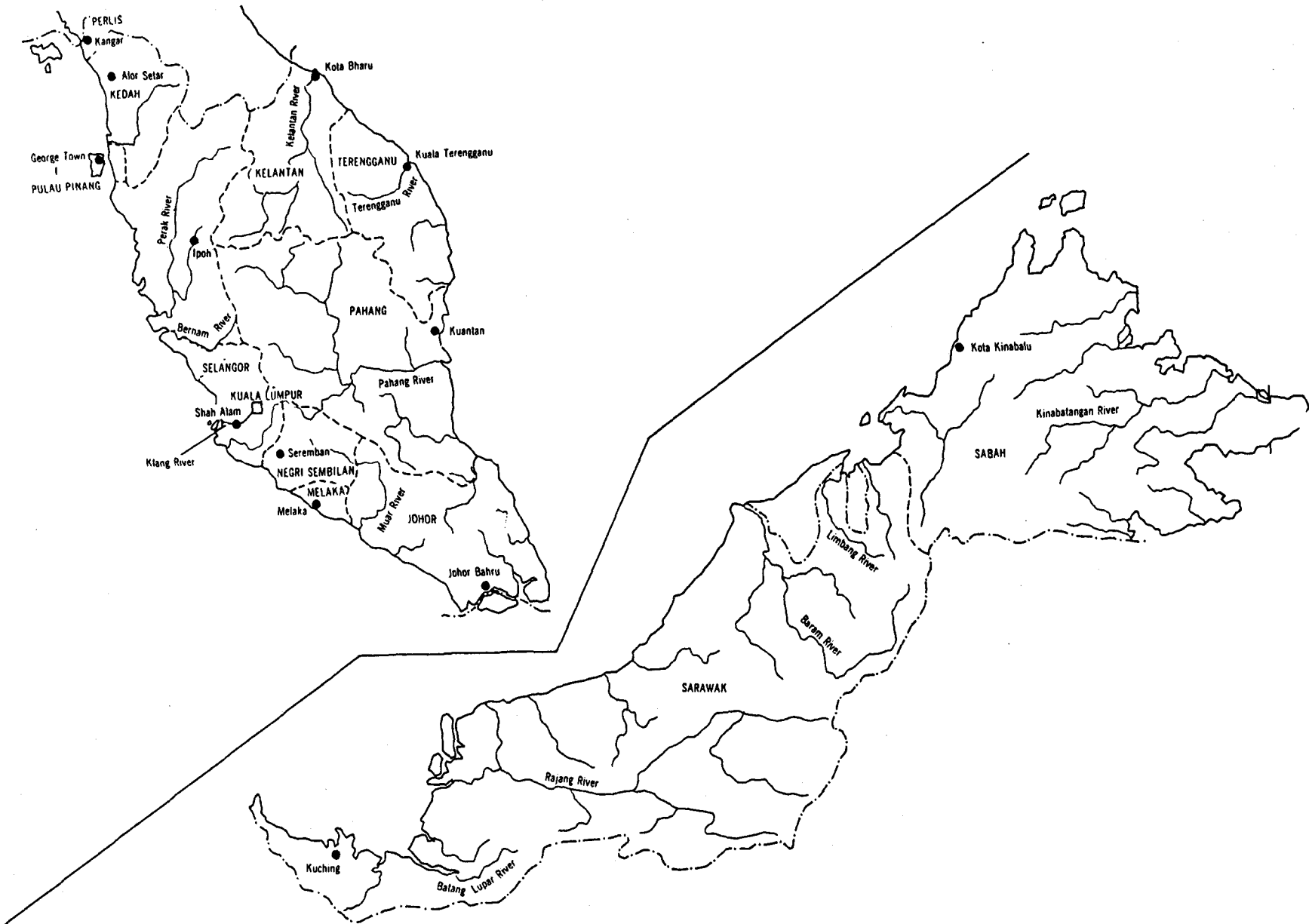
Signed:

Titled:

On behalf of the Government of Malaysia

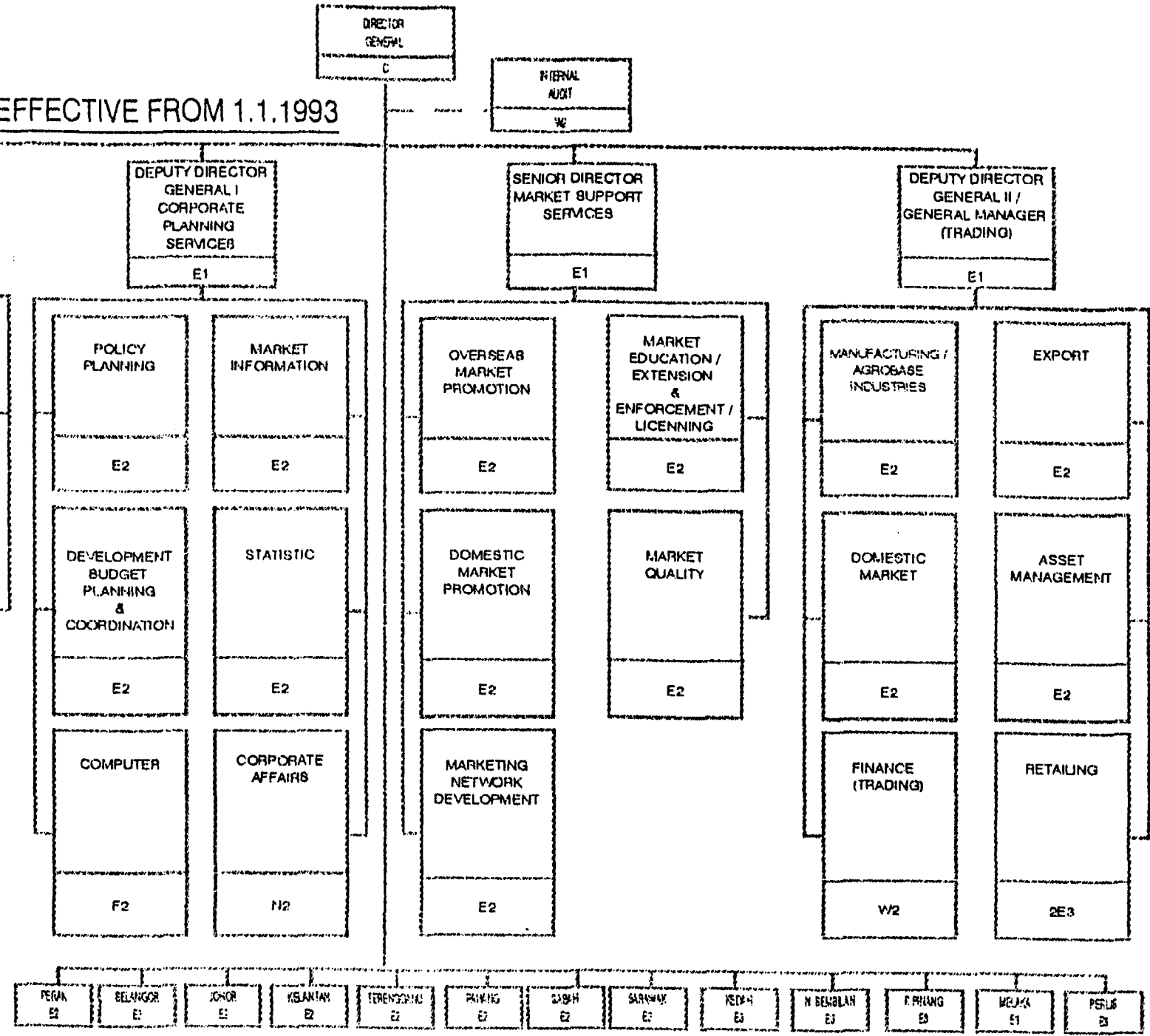
Date:

Location Map of FAMA's State Office



# FAMA NEW STRUCTURE - EFFECTIVE FROM 1.1.1993

D-6



Organization Chart of FAMA

**TERMS OF REFERENCE  
FOR  
THE FEASIBILITY STUDY  
ON  
MARKETING SYSTEM IMPROVEMENT AND DEVELOPMENT FOR FRESH AND  
PROCESSED HORTICULTURE AND LIVESTOCK PRODUCTS  
IN MALAYSIA**

**NECESSITY OF THE STUDY**

**Role of Agriculture**

1. In Malaysia, agriculture has declined in its contribution to the nation's Gross Domestic Product (GDP) over the last 10 years from 22.9% in 1980 to 18.7% in 1990 due mainly to faster growth of the manufacturing sector. In the Second Outline Perspective Plan (1991-2000), the agricultural sector is expected to remain as an important sector in the development of the national economy with a sustainable increase in earnings from RM 14,829 million in 1990 to RM 20,820 million in 2000, although its contribution to the GDP is projected to decline further to 13.4% in 2000.
2. The main objective of the National Agricultural Policy (NAP, 1992-2010) is to maximize income through optimal utilization of resources with specific aims to achieve a balanced development between the agriculture and manufacturing sectors, to enhance the integration of the agriculture sector with the manufacturing sector, and to achieve a higher level and greater depth of food industry development. The development strategies to be pursued under the NAP include: institutional development; human resource development; mechanization and automation; modernization and commercialization of smallholders production; intensification of research and development; agro-based processing and expanded integration with the manufacturing and service sectors; and aggressive global marketing.
3. From the above strategic viewpoints, the continuation of agricultural diversification promotion is the main thrust in Malaysia's agricultural development program. The commodities that came under the perspective of the agricultural development program in the mid-eighties were fruits, vegetables, flowers, livestock and aquaculture. The rate of growth in the horticulture sub-sector was 0.4%, -1.2% and 3.1% over the Third, Fourth and Fifth Malaysia Plans, respectively. Of livestock production, poultry attained the highest growth rate of 7.9% followed by dairy of 7.4% in the Fifth Malaysia Plans. Under the Sixth Malaysia Plan, the annual growth rate of production is expected to be 8.4% for the horticulture, 8.8% for the poultry and 14.8% for the dairy, while that of the agriculture sector is estimated to be 3.5% as a whole. In this respect, these three products are expected to play an increasingly important role in the development of the agriculture sector, particularly in the improvement of smallholders' economy in non-paddy areas of the country, over the next decade.
4. Malaysia's agriculture is the major employer of women, although the proportion of women engaged in the agriculture and forestry sector declined from 67.9% in 1970 to 28.2 % in 1990 consistent with the structural transformation of the economy. Within farm families, women play an important role as the decision-maker in financial matters, provide the labor for the family farm and are the driving force in terms of family development. It is clear that women remain an important factor in the rural agricultural sector.
5. Among various government agencies concerned, directly or indirectly involved in agricultural development, the Ministry of Agriculture (MOA) is a policy making body on all



aspects of agriculture in the country. Its responsibility also covers the diversification of development programs as well as the smooth running and effective performance of the agriculture, livestock and fishery sub-sectors except for the primary commodity sub-sector.

6. Under MOA, the Departments of Agriculture, Veterinary Services and Fisheries provide technical and managerial services to increase production in each sub-sector. The Federal Agricultural Marketing Authority (FAMA) established in 1965 as a statutory body functions to supervise, coordinate and improve marketing system of horticulture, livestock, freshwater fish and other agricultural products within the MOA's purview.

### **Needs to Evaluate Marketing Outlets Development Potential**

7. The marketing system is the final arbiter of all agricultural activities needed to support agricultural diversification and to accelerate development of smallholders' economy in the country. It covers market promotions, transport facilities, packaging and general product presentation techniques, and market information on quality and quantity needs to ensure that the products are efficiently marketed.

8. The agricultural marketing system in Malaysia still suffers from such deficiencies as price instability, seasonally in supply and demand, high marketing costs and margins, and lack of grades and standards for produce, high degree of post-harvest losses, and lack of adequate market information. In production side, there also exist constraints such as small and scattered nature of production, high cost and inconsistency of supply, variation in quality of the produce, and low production level due to the predominance of smallholders in the agriculture sector.

9. To overcome these constraints prevailing both in production and marketing fields and to meet the challenges in the 1990s in the marketing of smallholders' products, it is prerequisite:

- (1) To promote sub-sectoral growth by marketing smallholders' products to meet domestic requirement and to exploit overseas demand for fresh and processed products;
- (2) To maximize on-farm returns to products through improvement of the marketing system both in terms of effectiveness and efficiency, and through development of agro-processing to increase the value added to agricultural products; and
- (3) To formulate and implement human resource development program for creating new commercial and dynamic producers and entrepreneurs and for further utilizing the potential of woman power in agriculture.

10. The principal strategy to evolve an effective and efficient market system of smallholders' produce is to integrate three components of the marketing chain, namely supply, demand and market networks. In support of this strategy, drawing up of an implementation program on the following issues through undertaking of a feasibility study is urgently needed: establishment of market information system; development of market and agro-based industries; fostering of good marketing practice; promotion of farmers in direct marketing; modernization of trading practices; and rationalization of agency-industry cooperation.

### **NECESSITY OF THE JAPANESE TECHNICAL COOPERATION**

11. In order to conduct the proposed feasibility study covering technical, institutional and financial issues of the smallholders' product marketing in a comprehensive manner, it is prerequisite to organize a multi-disciplinary study team under the Japanese technical

cooperation program.

12. As FAMA will have to be directly involved in implementing these programs as the leading government agency dealing with the marketing of smallholders' produce, FAMA will assume the principal role in cooperating the Japanese study team among agencies concerned of MOA including DOA and DVS under steering of the Economic Planning Unit, Prime Minister's Department.

## **OBJECTIVES OF STUDY**

13. The objectives of the proposed Study are to examine the development potential of smallholders' agriculture in Malaysia from the marketing viewpoints and to formulate short to long term implementation plans for improvement of the existing marketing system from production to consumption segments. The target products, fresh to processed, to be covered by the Study comprise vegetables, fruits, flowers, coconut, coffee and poultry and dairy as the main local livestock products under the purview of MOA. The Study aims:

- (1) To review the existing marketing system of the target produce, fresh to processed, from producing to consuming stages with the view of determining the present conditions and also identifying improvement and development options in relation to the above-mentioned strategic programs and other related issues;
- (2) To evaluate market potential for the target produce, fresh to processed, in both domestic and overseas markets;
- (3) To identify new potential products through assessment of investment returns as well as internal and international market competitiveness;
- (4) To assess technical and economical feasibility on improvement and development options of marketing system of the target produce so as to put priority ranking in implementing the options;
- (5) To study organizational and legal issues to develop modern and systematic agricultural market structure;
- (6) To establish guidelines for planning, designing and operation of modern and systematic wholesale markets of the target produce as well as to recommend the followings:
  - the schedule of implementation of the new wholesale market system, and
  - the role of FAMA and other related agencies to control and manage the wholesale market paying special attention to how to get entry into the system to create a competitive market;
- (7) To evaluate human resource development needs and to recommend implementation programs for strengthening marketing system including participation of women; and
- (8) To prepare action programs to implement improvement and development measures for marketing system of the target produce;

## **AREA TO BE COVERED BY THE STUDY**

14. The Study covers Peninsular Malaysia, Sabah and Sarawak where FAMA provides its services.

## **SCOPE OF WORK**

15. The Study shall comprise two phases, namely Phase I and Phase II.

### **Phase I Study**

16. The Phase I Study shall be focused on overall review of the present marketing system of the target produce in the country as well as domestic and foreign market potential of the target produce, fresh and processed. The Phase I Study shall also identify and formulate improvement and development options in the respective stages from upstream to downstream of the marketing system of the target produce together with cost and benefit estimates as well as to establish a comprehensive plan showing a framework for improvement and development of the marketing system.

17. Major study items under the Phase I are:

- (1) To compile and review available data and information on the present marketing system of the target produce covering the following issues and carry out investigations if necessary;
  - production system and cultivation practices,
  - post-harvesting conditions,
  - transport, depot/storage and other market facilities and network with current utilization conditions as well as those linkage with distribution outlets at the consumption level,
  - packaging and general product presentation techniques at farm and wholesale levels including collecting, cleaning, grading, packing and storing activities,
  - activities of collectors, middlemen, traders, buyers, processors and wholesalers/retailers,
  - activities of related services sector. such as information services, forwarding agents, transport services, retailing services and restaurants,
  - activities of agro-based processing industries,
  - activities of farmers and farmer's associations in terms of their participation in marketing at wholesale and retail levels,
  - marketing cost and margin with pricing mechanism,
  - market promotions,
  - market information on quality and quantity needs as well as supply and price,

- market's incentives to farmers and consumers' behavior,
  - organizational and institutional aspects including role, function and involvement in marketing activities of FAMA and other relevant agencies,
  - legal issues on marketing system, and
  - management system of procurement and sales.
- (2) To collect, compile and review available information and data on market potential of the target products in domestic and overseas markets covering the following;
- present and projected production figures on the basis of commodity and administrative division,
  - present and projected data of marketed, post-harvest loss and exported/imported volumes and values by commodity,
  - present and projected costs for production and marketing and returns from investment, and
  - short to long term demand and price forecast in domestic and overseas markets.
- (3) To evaluate processing capacity of agro-based industries with marketing capability of their products including those produced by women's extension group,
- (4) To identify constraints prevailing in the present marketing system of the target produce and recommend remedied measures to overcome these constraints;
- (5) To evaluate market potential commodity by commodity as well as to identify new products, fresh and processed, and prospective markets, locally or overseas, for promotion of these products;
- (6) To identify improvement and development options for the present marketing system of the target produce and formulate alternative plans for these options with cost and benefit estimates paying special attention to the following;
- improvement of market information system,
  - promotion of marketing system development by introducing auction and franchise systems,
  - contribution to agro-based industrial development,
  - introduction of better marketing practices,
  - encouragement of farmers' participation in direct marketing,
  - promotion of FAMA's involvement in wholesale and retail activities,
  - introduction and practice of improved transport technology,
  - establishment of most cost effective management system in purchasing and selling the target produce,
  - gradual reduction of restrictions on marketing of the target produce such as tariff and non-tariff barriers,

- improvement of pricing mechanism for maximization of on-farm returns,
  - improvement of legal provision related to agricultural marketing, particularly concerning wholesale activities, and
  - promotion of agency-industry cooperation and further participation of women.
- (7) To examine technical feasibility and economic viability of the above alternative plans in a preliminary manner and determine priority;
- (8) To review and assess the following issues of FAMA for clarification of needs to overcome constraints and preparation of recommendations on the future direction of FAMA's involvement in marketing activities;
- the existing strategies and policies of FAMA's involvement in marketing activities,
  - capacity of FAMA's marketing facilities including warehouses, motor transport and hardware of management information system,
  - performance of FAMA's staff and its human resources development activities,
  - training needs of farmers and market intermediates,
  - FAMA's ability to disseminate information and knowledge to farmers and market participants,
  - FAMA's assets and financial status,
  - future directions of FAMA's responsibilities and functions with regard to FAMA's commercial approaches and corporatization focusing on: organizational structure; accounting system; remuneration and incentive scheme for workers; management information system required for decision making; the need to overcome supply problems in relation to quality, quantity and price; possibility of increasing supply through contract marketing locally and overseas; and inventory management system, and
  - better utilization of FAMA's training facilities and improvement of training programs with a view towards development of marketing agents and entrepreneurs including linkages with other marketing training centers abroad.
- (9) To review and examine present production, processing and training activities of DOA and DVS to supply the quality target produce to markets; and
- (10) To draw up a master plan to improve and develop the marketing system of the target produce including short-, mid- and long-term package action programs.

## **Phase II Study**

18. Subject to the Malaysian Government's comments on the comprehensive master plan to be formulated by the Phase I Study, scenarios packaging the alternative improvement and development plans with high priority ranking and an implementation program of proposed pilot projects will be made in the Phase II Study.

19. Major study items under the Phase II are:

- (1) To finalize the action programs for improvement and development of the marketing system taking into consideration the Malaysian Government's comments;
- (2) To select suitable areas, commodities, market facilities and marketing activities for formulating pilot projects;
- (3) To formulate the short-term improvement and development package plan in detail to enable the pilot projects to focus on the following:
  - design, construction scheduling and cost estimate of market infrastructures,
  - design, installation scheduling and cost estimate of market information system,
  - operation and management of marketing system,
  - institutional and legal arrangement to be required for implementation of the pilot projects including development and allocation of human resources,
  - FAMA and other relevant agencies' involvement to be required,
  - social approach to how to encourage farmers and marketers, especially women, to participate in the pilot projects,
  - financial arrangement plan for implementation of the pilot projects including funding sources for improvement and development of market infrastructures, and
  - Supporting system to farmers including financing service and its fund requirement.
- (4) To prepare an optimum implementation schedule of the pilot projects;
- (5) To analyze economic and financial impact of the pilot project implementation;
- (6) To evaluate social and environmental effects of the pilot project implementation; and
- (7) To establish guidelines for planning and designing of modern and systematic wholesale markets.

## **STUDY SCHEDULE**

20. The Study will be carried out in Malaysia and according to the schedule as attached herewith. The duration of the Study is 20 months.

21. To disseminate information on the Study outputs to policy makers and managers, a national seminar is expected to be organized at the end of the study period. A workshop is also expected to be organized at the appropriate time of the Study to transfer technology of planning, designing, operating and managing modern and systematic wholesale markets to staff of FAMA and relevant agencies.

22. The Study Team should comprise well experienced professionals such as marketing planner, agronomist/horticulture expert, post-harvest/plant quarantine expert, marketing

facilities expert, transportation expert, agro-based industry expert, management information system expert, agro-economist, sociologist/women in development expert, project economist, legal expert, institutional expert, human resource development/training expert and management consultancy expert.

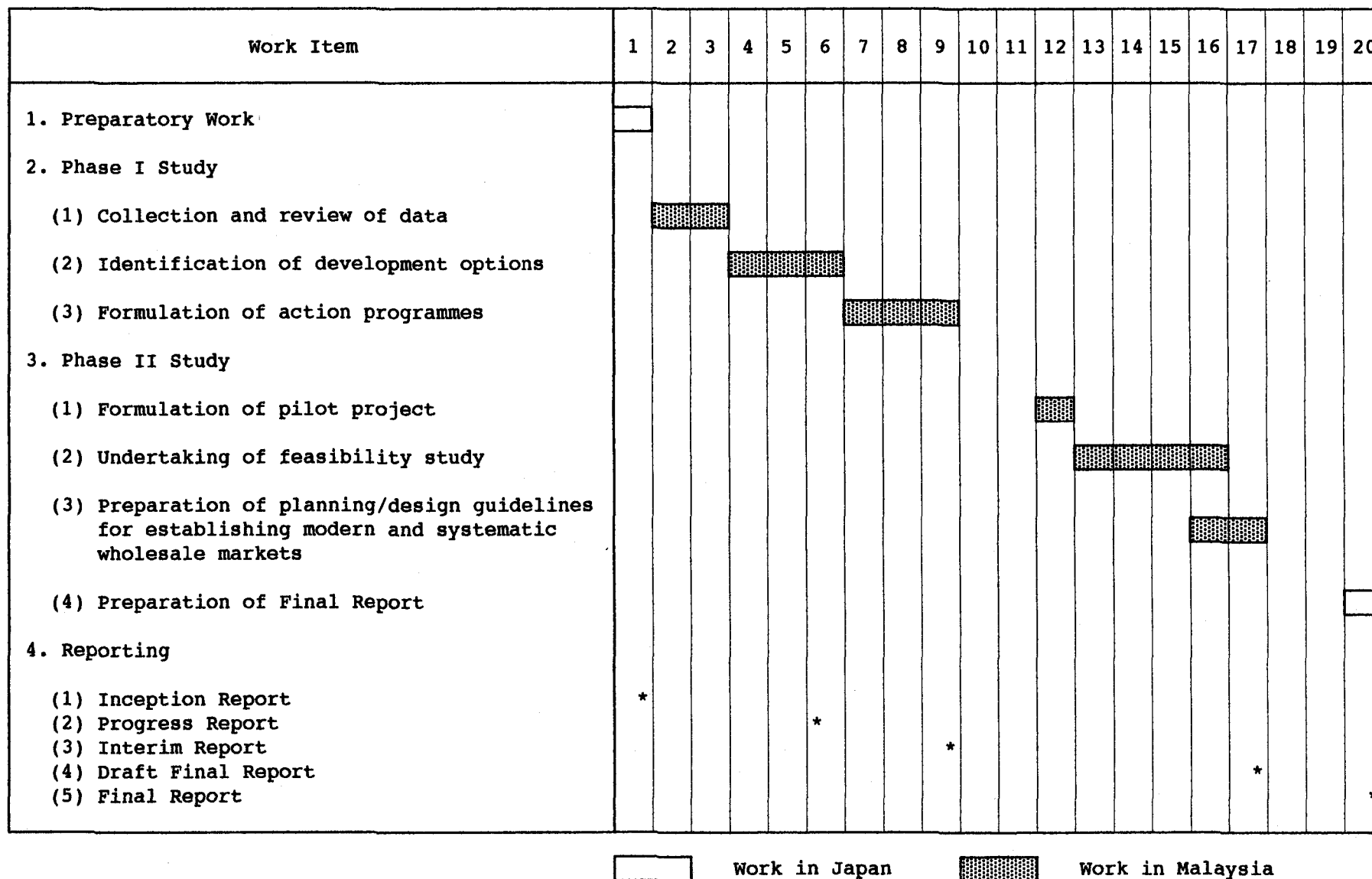
## **MAJOR OUTPUTS OF THE STUDY**

23. Major outputs of the Study are expected to be: (1) scenarios packaging the improvement and development options for the marketing system of the target produce; (2) the implementation program of the pilot projects to practice modernization of market infrastructures and development of marketing agents and entrepreneurs; and (3) guidelines for planning and designing of modern and systematic wholesale markets.

24. The following reports will be prepared through the Study:

- (1) Inception Report: Thirty (30) copies at the beginning of the Phase I Study;
- (2) Progress Report: Thirty (30) copies at the middle of the Phase I Study;
- (3) Interim Report: Thirty (30) copies at the end of the Phase I Study;
- (4) Draft Final Report: Thirty (30) copies at the end of the Phase II Study comprising General Report presenting the master plan, action programs and implementation program of the pilot project, several separate volumes presenting study results for marketing of the target produce of marketing, one volume regarding FAMA's role in agro-based industry, market practices and other issues, and one volume for human resources development and women's role in marketing;
- (5) Final Report: One hundred (100) copies within two (2) months after the receipt of the Malaysian Government's comments on the Draft final Report.

TENTATIVE TIME SCHEDULE FOR FEASIBILITY STUDY ON  
IMPROVEMENT AND DEVELOPMENT OF HORTICULTURE MARKETING SYSTEM IN MALAYSIA





## **ATTACHMENT 4**

**Assignment of counterpart personnel of the implementing agency for the Study**

**Counterpart personnel to be assigned by FAMA cover the following issues:**

- 1. Marketing Planning;**
- 2. Horticulture;**
- 3. Post-harvest/plant quarantine;**
- 4. Marketing facilities;**
- 5. Transportation;**
- 6. Management information system;**
- 7. Manpower development and training; and**
- 8. Market economy.**

**Counterpart personnel to be assigned from DOA, DVS and Malaysian Agricultural Research and Development Institute (MARDI) cover the following issues:**

- 1. Crop production;**
- 2. Poultry production**
- 3. Dairy production**
- 4. Agro economy**
- 5 Women in Development**
- 6. Agro-processing**

List of Information and documents related to the Study available in FAMA

KERTAS KAJIAN

Potensi Pasaran Bagi Barangan Terpilih 91/92, Jilid 1  
Potensi Pasaran Bagi Barangan Terpilih 91/92, Jilid 11  
Potensi Pasaran Bagi Barangan Terpilih 91/92, Jilid 111  
Laporan Kajian-Tingkhaku Pengguna Susu 1990  
Laporan Kajian-Kajian Penggunaan Barangan Terpilih Bagi Institusi 1990/1991  
Laporan-Kajian Penilaian Kempen Ikan Air Tawar Tahun 1990 (Peringkat Penjual)  
Laporan Kajian-Kajian Penilaian Pasar Tani (Peringkat Pengguna) 1991  
Laporan Kajian-Kempen Ikan air Tawar Tahun 1990 (Peringkat Pengguna)  
Warta Barangan-Harga Barangan Pertanian Terpilih 1990 Jld. 1  
Warta Barangan-Harga Barangan Pertanian Terpilih 1990 Jld. 11  
Warta Barangan-Harga Barangan Pertanian Terpilih 1991 Jld. 11  
Laporan Kajian-Kajian Permintaan Bahan Mentah Bagi Kilang Memproses 1990  
Laporan Kajian-Kajian Penilaian Pasar Tani 1991 (Peringkat Peserta)  
Laporan Kajian-Kajian Permintaan Bahan Mentah Bagi Kilang Memproses 1991/92  
Laporan Kajian-Sayur-sayuran Tanah Tinggi Sabah  
Laporan Kajian-Kajian Penggunaan barangan Terpilih Bagi Indtitusi 1991/92 Jld. 1  
Laporan Kajian-Kajian Penggunaan Barangan Terpilih Bagi Institusi 1991/92 Jld. 11  
Laporan-Kajian Penilaian Kempen Memakan Ikan Air Tawar 1992 (Peringkat Pengguna)  
Warta Barangan-Harga Barangan Pertanian Terpilih 1992 Jld.1  
Warta Barangan-Harga Barangan Pertanian Terpilih 1992 Jld.2  
Laporan-Kajian Kos Dan Margin Buah-Buahan Tempatan Tahun 1992  
Data Siri Masa Buah-Buahan 1982-1991  
Data Siri Masa Sayur-sayuran 1982-1991

## **KERTAS KERJA**

**Export Marketing Management of Fruits**

**Carriage of Frozen and Fresh Goods: A Ship Owner View Point**

**Export Incentives for Fresh Fruits and Flowers**

**Airfreighting of Fruits and Flowers**

**Teknologi Pengendalian Buah-Buahan Segar untuk Eksport**

**Export Marketing Management of Flowers**

**Market Potential for Agricultural Produce**

**Prospect and Potential of Tropical Fruits Juice in the International Market**

**Experiance and Problems of the Floriculture Industry**

**Pasaran Bunga-Bunga Di Hong Kong dan Jepun**

**Grading Of Belimbing For The Export Market**

**Status dan Prospek Pasaran Buah-Buahan Malaysia di Negara Sweden**

**Prospek Industri Kopi Malaysia**

**The Malaysian Experience in Developing A Market Information System for Horticulture Products**

**Packaging Technology of Flowers for Export**

**Quarantine Procedures for the Export of Fruits and Flowers**

**Statistical Brief on Floriculture**

**Statistical Brief on Fresh and Processed Fruits**

**Marketing of Chilli-Problems and Strategies**

**Pasaran Buah-Buahan Tropika Di Netherlands, Tujuan mengenai Pasaran Buah-Buahan Terpilih Dari Malaysia**

**Potensi Pengeluaran Hasil Dari Ciku**

**Improving Productivity in the Fresh Fruit Industry through Planting Materials and Field, Evaluation For Top-Plant's Tissue Cultural Pisang Mas**

**Status Dan Prospek Pasaran Buah-Buahan Tropika di Kanada**

**Pemasaran Buah-Buahan Yang Diproses, Potensi Untuk Buah-Buahan Kering Beku (Freeze Dry)**

**Pemasaran Buah Durian Dan Produk Durian sehingga tahun 2000 - satu perspektif**

Sources of Raw Materials for the Jam Manufacturing Industry  
 Floricultural Industry in Malaysia - Market Potential and Marketing Aspects  
 Peranan Kuota Dalam Industri Kopi  
 Status Dan Potensi Pemasaran Betik Dan Ciku  
 Teknologi penanaman betik: Status dan masalah  
 Pengalaman penanaman betik secara komersial  
 Teknologi penanaman ciku: Status dan masalah  
 Sistem pengendalian lepas tuai betik  
 Status ekonomi pengeluaran betik dan ciku di Malaysia  
 Masalah para pengeksport buah-buahan  
 Sistem pengendalian lepas tuai ciku  
 Pengalaman penanaman ciku secara komersial  
 Sekim kemudahan pembiayaan semula kredit eksport untuk buah-buahan  
 Market Potential For Horticultural produce  
 Local consumer preference Of Fresh Cut Flowers  
 Production Of Fresh Cut Flowers Issues & Strategies  
 Penetrating the Fresh Cut Flower Market in South Kore: Strategies and Challenges  
 Penetrating The Fresh Cut Flower Market In Taiwan: Strategies And Challenges  
 Export Trends for Fresh Orchids  
 Export Trends for Fresh Highland Flowers  
 Post-Harvest handling of Malaysian Fresh Cut Flowers  
 Marketing Strategies to Increase Domestic Consumption Of Fresh Cut Flowers  
 Fumigation of Malaysian Fresh Cut Flowers for Export Markets  
 Quarantine Requirements for Export Of Fresh Cut Flowers to Taiwan  
 Export Development Support at Country and Enterprise Level of Fruit Juices (ITC)  
 Perangkaan Perdagangan Luar Buah-buahan 1988-1992  
 Potensi Pemasaran Produk-produk Hortikultur Di Singapura  
 The Orchid Industry in Malaysia - Market Potential and Marketing Aspects

The Fruit Industry in Malaysia - Market Potential and Marketing Aspects

Penyelidikan Pengeksportan Buah-buahan Dengan Kapal Laut

Market Prospects for Malaysian Tropical Fruits in Western Europe with Particular Reference to the Netherlands and How New Malaysia Exporters Can Tap This Market Opportunity

Horticulture Marketing - Key Issues and Strategies

Perangkaan Perdagangan Luar Bunga-bunga 1988-1992

### PENGENDALIAN LEPAS TUAJ

Pengendalian Dan Pemasaran Ikan Air Tawar

Pemasaran Dan Pengendalian Lepas Tuai Belimbing

Pengendalian Lepas Tuai Bunga-Bunga Keratan

Pengendalian Untuk Pemasaran Ikan Hiasan

Pengendalian Pascatuai Untuk Pemasaran Bunga Keratan (Orkid)

### BEKALAN KOMODITI

Bekalan Komoditi - Maklumat Suku Tahun Pertama 1990

Senarai Pengusaha Ikan Hiasan

Maklumat Suku Tahun Pertama 1990 - Ikan Air Tawar

Senarai pengeluaran Hortikultur Negeri Johor

Senarai Pengeluaran Hortikultur Negeri Selangor

Senarai Pengeluaran Hortikultur Negeri P.Pinang

Senarai Pengeluaran Hortikultur Negeri Melaka

Senarai Pengeluaran Hortikultur Negeri Sembilan

Senarai Pengeluaran Hortikultur Negeri Pahang

Senarai Pengeluaran Hortikultur Negeri Kelantan

Senarai Pengeluaran Hortikultur Negeri Perak

Senarai Pengeluaran Hortikultur Negeri Kedah/Perlis

Senarai Pengeluaran Hortikultur Negeri Terengganu

Tinjauan Kopi Malaysia 1990

Tinjauan Kopi Malaysia 1991/1992

Maklumat Bekalan Hortikultur Sem. Malaysia 1991

Senarai Pengeluar Bunga-bunga Tanah Tinggi

Tinjauan Pasaran Belimbing

Tinjauan Pasaran Buah-Buahan

### **RISALAH DAN RESIPI**

Malaysian Papaya Exotica (Risalah)

Malaysian Papaya Exotica (Resipi)

Malaysian Starfruits (Risalah)

Malaysian Starfruits (Resipi)

Discovering Malaysian Fruits

Malaysian Orchids (Risalah)

List of Fruits Exporters

Malaysian Pepper Exporters

Malaysian Fish Exporters

Resipi Antarabangsa

Resipi Ulam & Sayuran Tempatan

Malaysian Exotic Fruits

Orchids Of Malaysia

Malaysian Temperate Blooms

Rampai Selera Ikan Air Tawar

Resipi Buah-Buahan Dan Sayur-sayuran Tempatan

Resipi Pisang Mas

Resipi Daging Arnab

Sarawak Pepper Flavours The World (JPLH)

Risalah Tembikai

Risalah Rambutan

**Risalah Jambu Batu (Guava)**

**Risalah Manggis**

**Resipi Lada Hitam/Putih**

**Mutu Sayur-sayuran Untuk Pasaran**

**Mutu Buah-Buahan Untuk Komersial**

**Commodity Catalogue**

**Malaysian Orchids (Baru)**

**List of flowers exporters**

**Exotic Fruits Of Malaysia**

## 添付資料ー5

- 5.1 ADCAミッションの調査工程
- 5.2 面会者リスト
- 5.3 収集資料一覧



## ADCAミッションの調査工程

日 順	年・月・日	曜日	起点および 経由地	目的地 滞在地	活 動
1	5・11・4	木	成田	クアラルン プール	移動（JL723）
2	5・11・5	金	－	クアラルン プール	大使館、JICA表敬 農産物流行庁打ち合せ
3	5・11・6	土	－	クアラルン プール	主要流通施設
4	5・11・7	日	クアラルン プール	ジャカルタ	移動（MH711）
5	5・11・8	月	－	ジャカルタ	大使館、JICA表敬 DGWRD打ち合せ
6	5・11・9	火	ジャカルタ パレンバン	マルタプーラ	移動（MZ130） 州事務所打ち合せ、資料収集
7	5・11・10	水	－	マルタプーラ	コメリン開発事務所打ち合せ 現地踏査（オキ県）
8	5・11・11	木	マルタプーラ	バンドル ランボン	移動陸路、州事務所打ち合せ
9	5・11・12	金	－	バンドル ランボン	現地踏査（北ランボン県）
10	5・11・13	土	－	バンドル ランボン	州事務所打ち合せ、資料収集
11	5・11・14	日	バンドル ランボン	ジャカルタ	移動（MZ203）
12	5・11・15	月	－	ジャカルタ	DGWRD報告、打ち合せ
13	5・11・16	火	ジャカルタ	機中泊	大使館、JICA報告、移動
14	5・11・17	水		成田	帰国（JL726）
15					
16					
17					
18					
19					
20					
21					

面会者リスト                      **List of Attendants**

---

**REPUBLIC OF INDONESIA**

Directorate of Planning and Programming, DGWRD

1. Mr. Soenarto Soendjaja M. Eng        : Chief of Sub-directorate of P2WS
2. Mr. Suharto DIPL H.E, MBA        : Staff
3. Mr. Ruckyat Kustomi                : Staff
4. Mr. Toshiki Saito                    : JICA Expert

Directorate of Irrigation II

1. Mr. Kusumo Respatyo MEng.        : Staff
2. Mr. Agus Jatiworyono               : Staff
3. Mr. Younosuke Uematsu            : JICA Expert
4. Mr. H. Kudo                         : JICA Expert

Regional Office of Public Works in South Sumatra Province

1. Mr. Ishak Komar                     : Head
2. Mr. Arman Sulim                     : P3SA
3. Mr. Sahib                             : Chief of River and Belitang

Provincial Public Works in South Sumatra Province

1. Mr. Hasan Nuh                        : Head
2. Mr. Muslimin                         : Chief of Department of Water Resouces Development

BAPPEDA, South Sumatra Province

1. Mr. H.T. Simanjuntak                : Head
2. Mr. Buhori                            : Chief of Dept. Infrastructure Regional Planning Board

Provincial Public Works in Lampung Province

1. Mr. Sutrisno M. Eng.                : Chief of Irrigation Section
2. Mr. Sembiring, ME                   : Chief of Planning and Design Section
3. Mr. Djoko Subandrio                 : Chief of O&M Section
4. Mr. Conny Mardjani, M. Eng.       : BP2SDA

Komerling Irrigation Project

1. Mr. Suryono Ar. Dipl. HE.           : Project Manager
2. Mr. Tri Harjun Ismaji. Msc         : Chief of Technical Division
3. Mr. Satriyohadi                      : Chief of Weir Works

Embassy of Japan in Indonesia

1. Mr. Norimitchi Kadoya               : First Secretary, Embassy of Japan

JICA Indonesia Office

1. Mr. Ken'ichi Shishido               : Assistant Resident Representative
-

## 添付資料－5.2 (2/2)

### 面会者リスト

### List of Attendants

---

#### MALAYSIA

##### Federal Agricultural Marketing Authority (FAMA)

1. Mr. Abdul Aziz Mohd Yaacob : Director General
2. Mr. Abu Bakar Hamid : Deputy Director General, Corporate Planning
3. Mr. Mukhtiar Singh : Director, Market Information Division
4. Mr. Moong BA : Cold-room Manager

##### Embassy of Japan in Malaysia

1. Mr. Makio Shichijo : Second Secretary, Embassy of Japan
2. Mr. Hidenao Sawayama : Second Secretary, Embassy of Japan

##### JICA Malaysia Office

1. Mr. Satoru Kohiyama : Deputy Resident Representative
-

## 添付資料－5.3

### 収集資料一覧

#### インドネシア

1. South Sumatera in Figures, 1991, Kantor Statistik Propinsi Sumatera Selatan, Statistical Office of South Sumatera Province
2. Lampung in Figures, 1991/1992, Kantor Statistik, Provinsi Lampung
3. Musi River Basin Study, Master Plan for Southern Sumatra Land and Water Resources Development, Final Report, December 1989
4. Hydrological Network, Lampung Province, Sumatra, Final Report, Part 1, Volume 1, Network Establishment & Organization, Ministry of Overseas Development, London, April 1975
5. Laporan Persiapan Pembentukan Kabupaten Lampung Barat, Propinsi Dati I, Lampung, Pemda Tingkat I, Lampung, April 1991
6. Program Pembangunan Pengairan Kabupaten Lampung Barat, DINAS Pekerjaan Umum, Sub. DINAS Pengairan, April 1992
7. Hidrologi Data Pada Sembilan Daerah Irigasi di Propinsi Lampung, Final Report/Laporan Data Processing, 1992
8. Maps (1/50,000) for Ogan-Lower Komering River Basin
9. Maps (1/50,000) for West Lampung District and Semangka River Basin

#### マレーシア

10. The Role of FAMA in Horticultural Development, Federal Agricultural Marketing Authority (FAMA), Ministry of Agriculture
11. Yearbook of Statistics, 1992, Department of Statistics, Malaysia
12. Sixth Malaysia Plan, 1991-1995,
13. Economic Report, 1993/94, Ministry of Finance Malaysia
14. Malaysia Agricultural Directory and Index 93/94, Pantai Maju
15. Area of Miscellaneous Crops, Semenanjung Malaysia, 1991, Kementerian Pertanian Malaysia

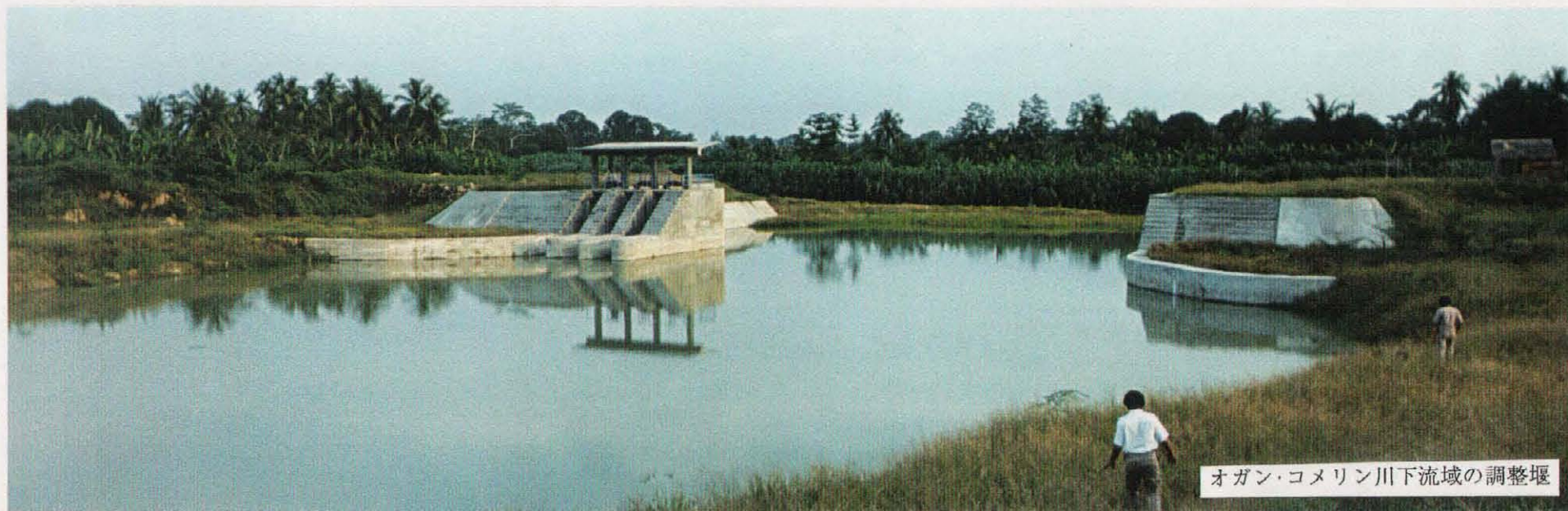
添付資料－6

現地写真集





オガン川とコメリン川を結ぶ連絡水路



オガン・コメリン川下流域の調整堰



インドネシア国 西ランポン地区及びスマンカ川流域灌漑開発計画



バリサン山脈から西ランポン地区を望む



スマンカ川流域の既存灌漑システム - 取水工





卸し売り市場（クアラルンプール）



農民マーケット（クアラルンプール）





FAMA管轄の卸し売り市場



FAMAのCool Room