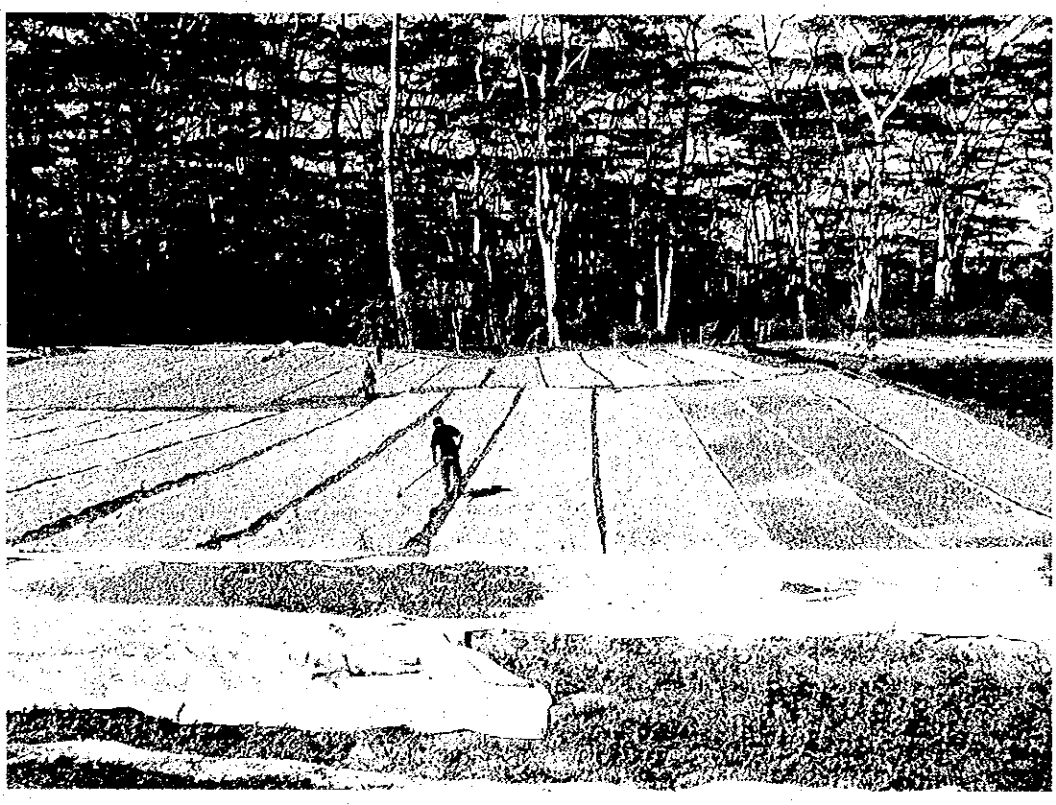
# CHAPTER IV.
# OVERALL DEVELOPMENT STRATEGY FOR THE COUNTRY



# CHAPTER IV. OVERALL DEVELOPMENT STRATEGY FOR THE COUNTRY

## 4.1 Future Macro-Economic Prospects

Future economic growth will need to be driven by the private sector. Government resources, both human and financial, are severely limited. To encourage economic growth, a range of steps should be immediately taken. Among the most crucial, there is a pressing need to: i) expand the credit market, ii) reconcile the apparent inconsistency between the high level of urban unemployment and high wage rates, iii) create an effective land market; and iv) establish a legislative and regulatory environment conductive to private sector investment and growth. Especially critical are the establishment of laws for corporate governance, foreign investment, labor codes, land and property. If effective steps are taken quickly, while world attention is still focused on East Timor, the economy can expect to be boosted by healthy private sector investment and growth.

In the public sector, there exists financial concern over the mid-term if the public expenditure path currently being pursued continues. At present, government expenditures are nearly double government revenues. A very worrisome situation is the growth of the civil service. The level of public employment cannot easily be reduced without causing serious social and political problems. Another potentially dangerous situation is that enlarged expenditure pressures could arise if off-budget public agencies, such as power, water and sanitary services, are unable to meet their costs through collection of user fees. Such agencies would then require resources to drawn from the general government budget.

Non gas/oil revenues at 36 US$ million 2001/02 are quite modest and not expected to increase significantly over the mid-term. However, major income will be generated from the gas/oil sector. The Study Team has made a range of projections of Timor Gap/oil revenue based on government and producer estimates. However, these projections are best used with caution. By their very nature, income projections in the industry are subject to significant technical, political and economic unknowns. Study Team's Base Case of Timor Gap Revenue is presented in following table. These estimates are based on oil revenue from the area now producing (Elang Kakatua) and the next area scheduled to come on stream (Bayu-Undan). Gas income is not included as its exploitation and timing of its extraction is less uncertain.

Timor Gap Oil Revenue Estimates (Base Case)

| Year | Revenue (millions US$) | Year | Revenue (million US$) |
|---|---|---|---|
| 2003 | 2.7 | 2010 | 87.4 |
| 2004 | 53.6 | 2011 | 105.0 |
| 2005 | 125.1 | 2012 | 91.8 |
| 2006 | 125.1 | 2013 | 61.2 |
| 2007 | 89.3 | 2014 | 56.9 |
| 2008 | 78.6 | 2015 | 48.1 |
| 2009 | 91.8 | | |

Under the Base Case scenario, external financing to run the government and provide for development is required until 2005. Maximum income will occur in years 2005 and 2006, and decline thereafter. Costs to operate the government are currently running at about 70 US$ million per annum. Thus, if the sound management is applied, sufficient resources will be available to fuel economic growth including that of the agricultural sector.

However, there exists the danger that the allure of easy gas/oil revenues will adversely impact on prudent fiscal management. There has already begun to appear a disturbing trend to finance higher levels of recurrent expenditures using non-renewable resources, such as Timor Gap oil income. However, allocations of oil/gas proceed to support the civil service rather than sustainable development projects are unwise. A sound deficit financing strategy needs to be followed to reduce government expenditures to the minimum, decrease the reliance on foreign grants, maximize the return on non-renewable resource income and consider a program of gas/oil resource use as followed in Norway. These gas/oil revenues accumulate in a trust fund and only proceeds of the fund finance recurrent government expenditures.

## 4.2 Integrated Rural Development Plan and Macro-Economic Perspectives

In this section, the basic concept for the integrated rural development plan will be reviewed in terms of the following three macro-economic perspectives, thereby giving clear-cut visions for the said development plan. The first macro-economic perspective is the financial aspect, the second macro-economic perspective is the food security aspect, and the third macro-economic perspective is the poverty reduction aspect of the plan. The analysis based on the updated data after the Draft Development Report I will be additionally conducted.

### 4.2.1 Analysis on Financial Aspects in Draft Development Plan Report (1)

1) Available Financial Resources for the Agricultural Sector

There are mainly seven financial resources available for the reconstruction and development of East Timor, almost of all which are external financial resources. The said seven financial resources include; i) UNTAET Assessed Fund, ii) CFET (Consolidated Fund for East Timor), iii) TFET (Trust Fund for East Timor), iv) Direct Bilateral Fund, v) CAP (Consolidated Inter-Agency Appeal) Fund, vi) UN Agencies Fund, and vii) NGOs Fund. Table M.2-1 indicates the budgetary scale of those available financial resources.

The largest external financial resource is the UNTAET assessed fund, which supports the establishment and maintenance/operation of the UNTAET mission. An assessed contribution is based on the ability and affordability of a UN member country to pay. The UNTAET assessed contribution budget finances expenses with regard to the UN involvement in East Timor including the peacekeeping forces, civilian police, UN buildings, vehicles, UNTAET staff, and communications. However, the assessed fund does not cover the running costs of the

East Timor Punlic Administration (ETPA), and also does not fund development and reconstruction projects. The total UNTAET assessed fund for the period from 1999 November to 2001 June is approximately US$ one billion.

CFET stands for Consolidated Fund for East Timor, and it finances the transitional national government (ETPA), which the international donor community established within the structure of UNTAET. The CFET is composed of two revenue sources; the voluntary contribution from donor countries in the form of the UNTAET Trust Fund (UNTF), and East Timor's own domestic revenues including the collected taxes, import duties and various user fees. The total CFET for the fiscal year 2001 amounts to US$ 65.4 million which is composed of the US$ 45.4 million of USTF and US$ 20.0 million of the domestic revenue.

The multi-donor Trust Fund for East Timor (TFET) was created as one component of overall assistance promised for East Timor in a meeting of donors on December 1999 in Tokyo. TFET activities are identified by Timorese counterparts in coordination with the World Bank, ADB, TFET donors and other stakeholders through the joint sector missions. The TFET portfolio concentrates on basic post-conflict reconstruction, including physical rehabilitation of key social and economic infrastructure. Reconstruction activities started in the first semester of 2000. The total commitment line of the TFET for the period from the fiscal year 2000 to 2002 is approximately US$ 168.9 million.

The direct bilateral fund includes the bilateral government-to-government assistance in various fields including the agricultural sector. Such assistance includes the support from JICA, USAID, AUSaid, and other bilateral donor agencies. It is estimated that during the period from the fiscal year 2000 to 2003, those bilateral assistance is estimated at US$ 180 million.

There are other three financial resources such as CAP fund, UN Agencies Fund, and NGOs fund, which are mainly used for the humanitarian aid. On the other hand, the UNTAET assessed fund, CFET, TFET, and other direct bilateral funds are supposed to cover the agricultural sector in the form of the so-called Combined Sources Budget.

2) Timor Gap Revenue

a) Zone A

A Timor Gap Zone of Cooperation Treaty was signed in 1989 by the governments of Indonesia and Australia. The treaty established Zones of Cooperation to share the resources, and covers approximately 65,000 sq.km with three areas (Zone A, B, and C), whereas in Zone B it is 90/10 in favor of Australia, and in Zone C it is 10/90 in favor of East Timor.

Since 1991, 42 wells have been drilled in Zone A, which is estimated to reserve approximately 300-400 million barrels of condensate and Liquefied Petroleum Gas (LPG), proven natural gas reserves of about four trillion cubic feet, and the prospect of another four trillion cubic feet in areas to be explored.

b) Elang-Kakatua Project

Currently, Phillips Petroleum operates the Elang-kakatua (EK) field, comprising two small crude oil accumulations. The Elang-Kakatua was discovered by the BHP Petroleum led PSC 91-12 joint venture in 1994 and has been in production since August 1998. Phillips Petroleum acquired the BHP Petroleum subsidiary holding interests in PSC 91-12 in April 1999 and assumed operator-ship of the fields at that time. Since its acquisition, Philips and other joint venture participants have invested additional funds successfully to expand and extend the life of these small fields. Developed at a cost of approximately US$ 100 million, these fields involve submarine well completions connected to a leased Floating Production Storage and Offloading (FPSO) vessel moored near the fields. The initial oil production peaked at 40,000 barrels per day shortly after start-up. This field may continue to produce until late 2002.

c) Bayu-Undan Project

The Bayu-Undan gas and gas condensate field, located in Area A of the Timor Gap Zone of Cooperation, was discovered by the Philips' led 91-13 PSC group in 1995. It is located approximately 500 km northwest of Dawin and 250 km south of Suai and straddled PSC blocks 91-12 and 91-13 in Area A. The field dimensions are generally 25 km long and 12 km wide and covers an area of 160 sq.km. It is estimated that the proven/probable reserves from the Bayu-Undan resource are 400 million barrels of condensate and Liquefied Petroleum Gas, and 3.4 trillion cubic feet of natural gas.

The Bayu-Undan project will be developed in two district phases. The approved first phase development will involve the installation of facilities off-shore to produce gas liquids (condensate and liquefied petroleum gas). Dry gas will be recycled into the reservoir. This first phase of development is referred to as the Gas Recycle Project (Bayu-Undan Phase 1 Project). The second phase of development is referred to as the Gas export Project (Bayu-Undan Phase 2 Project), and it will include transporting gas by submarine pipeline from the field to a destination near Darwin. The detailed schedule of the second phase development depends on the availability of sufficient LNG and domestic gas markets to enable approval and construction of an export pipeline Bayu-Undan to Darwin.

Regarding the Bayu-Undan Phase 1 Project, following an exchange of diplomatic notes on 10 February 2000 between Australia and UNTAET on behalf of East Timor regarding the Timor Gap Treaty, the final Bayu-Undan Gas Recycle Development Plan was submitted to and approved by the Timor Gap Joint Authority on 23 February 2000. The first liquids production is planned for late 2003 with full commercial production expected at the beginning of 2004. On the other hand, there are some uncertainties on the implementation of the Bayu-Undan Phase 2 Project.

d) Sunrise Gas Project

The letter of intent for the gas supply project from the Sunrise Field, which is situated on the northeast of the Bayu-Undan, was submitted by the Woodside Energy, the operator of the Sunrise Gas Project. Since this project is based on the presumption that the pipeline would be connected to the northern territory through the projected pipeline of the Bayu-Undan Phase 2 Project, there would also be some uncertainties on this large-scale project.

In summary, since the last two projects, the Bayu-Undan Phase 2 project and the Sunrise Gas Project, are uncertain, the revenue from these 2 projects shall not be counted in this analysis. Table M.2-2 indicates and illustrates the list of the projects in the Timor Gap area.

3) Conditions for Alternative Cases

The budgetary scale of the agricultural sector, which could be available for the integrated agricultural development plan would mainly depend on the following three factors. The first and most influential factor is the expected off-shore revenue from the Timor Gap. It is assumed that conditions for the off-shore revenue would be the following seven basic cases, taking into account the fact that there would be considerable uncertainty for the operation of the Bayu/Undan Phase 1 project.

i) Base case which is estimated by the Central Fiscal Authority (Case A)
ii) 2-year delay in the revenue accrual compared with the base case (Case B)
iii) 25 percent decrease in the revenue compared with the base case (Case C)
iv) 50 percent decrease in the revenue compared with the base case (Case D)
v) 2-year delay in the revenue accrual and 25 oercent decrease in the revenue compared with the base case (Case E)
vi) 2-year delay in the revenue accrual and 50 percent decrease in the revenue compared with the base case (Case F)

In addition to these six cases, there would be Case G, which does not include any revenue from the Bayu-Undan Phase 2 project.

The second determinant factor is the on-shore revenue, which is composed of the CFET, TFET and other direct bilateral aid and assessed fund. Since the UN assessed fund would not be used for the investment on the agricultural sector, the conditions for the CFET, TFET and other direct bilateral aid would be set up as below;

Conditions for Estimate of CFET

| Case for CFET | Description |
|---|---|
| High | 50 % of the present UNTF is applied for the period from 2003 to 2007. |
| Standard | 25 % of the present UNTF is applied for the period from 2003 to 2007. |
| Low | No UNTF from 2003 onward. |

Conditions for Estimate of TFET

| Case for TFET | Description |
|---|---|
| High | 50 % of the present TFET is applied for the period from 2003 to 2007 as the 2nd TFET. |
| Standard | 25 % of the present TFET is applied for the period from 2003 to 2007 as the 2nd TFET. |
| Low | No 2nd TFET from 2003 onward. |

Conditions for Estimate of Other Direct Bilateral Aid

| Case for Bilateral Aid | Description |
|---|---|
| High | 20 % increase based on Standard Case |
| Standard | 30 % of the total bilateral aid amount in the combined sources budget for 2001-2002 is applied for the period from 2003 to 2007, 20 % for 2008-2012, and 10 % for 2013-2017. |
| Low | 20 % decrease based on Standard Case |

The last determinant factor is the budgetary share in the combined sources budget. The budgetary share of 9.8 percent for the agricultural sector in the combined sources budget would be set up as the standard case.

Alternative Budgetary Share of Agricultural Sector in the Combined Sources

| Case for Budgetary Share of Agricultural Sector | Description |
|---|---|
| High | 20% increased based on Standard Case |
| Standard | The budgetary share of 9.8 % for the agricultural sector in the combined sources budget for 2001-2002 is applied for the period from 2003 to 2017. |
| Low | 20 % decrease based on Standard Case |

Table M.2-3 lists all the conditions for alternative cases for this analysis.

4) Alternative Cases

In accordance with the combinations of the above-mentioned conditions of three determinant factors for the scale of the available financial resources for the agricultural sector, there would be many cases under each case for the Timor Gap revenue for the analysis. Table M.2-4 to Table M.2-10 indicate the combinations of the conditions of three determinant factors for Case A to Case G, respectively. The following table indicates the most optimistic case, standard case, and the most pessimistic case under each case for the Timor Gap revenue.

Alternative Cases for Timor Gap Revenue

| Case | I (Most Optimistic) | II (Standard) | III (Most Pessimistic) |
|---|---|---|---|
| Case A | A-1-1 | A-41-2 | A-81-3 |
| Case B | B-1-1 | B-41-2 | B-81-3 |
| Case C | C-1-1 | C-41-2 | C-81-3 |
| Case D | D-1-1 | D-41-2 | D-81-3 |
| Case E | E-1-1 | E-41-2 | E-81-3 |
| Case F | F-1-1 | G-41-2 | F-81-3 |
| Case G | G-1-1 | G-41-2 | G-81-3 |

5) Summary of Alternative Cases for Analysis

In order to simplify the simulation of the above-mentioned alternative cases, the most optimistic case, the standard case, and the most pessimistic case under each case for the Timor Gap revenue (A, B, C, D, E, F, and G) would be tabulated as per Table M.2-11. As a result, the following 21 cases would be examined for the prospect of the available financial resources for the integrated agricultural development plan.

Summary of Alternative Cases

| Case | Most optimistic | Standard | Most pessimistic |
|---|---|---|---|
| Case A | A-I | A-II | A-III |
| Case B | B-I | B-II | B-III |
| Case C | C-I | C-II | C-III |
| Case D | D-I | D-II | D-III |
| Case E | E-I | E-II | E-III |
| Case F | F-I | F-II | F-III |
| Case G | G-I | G-II | G-III |

6) Estimate of Timor Gap Revenue

Since the Bayu/Undan Project Phase 2 as well as the Great Sunrise Project is uncertain, the revenue from the Timor Gap would include the currently-operating Elang-Kakatua project as well as the promising Bayu/Undan Project Phase 1. Table M.2-12 to Table M.2-18 indicate the estimate of the revenue from the Timor Gap, and the summary of the estimate is tabulated as below;

Estimate of Timor Gap Revenue

(unit :US$ thousand)

| Case | Minimum (Fiscal Year) | Maximum (Fiscal Year) |
|---|---|---|
| Case A | 2,733 (FY 2003) | 125,048 (FY 2005) |
| Case B | 0 (FY 2004) | 125,048 (FY 2007) |
| Case C | 2,050 (FY 2003) | 93,786 (FY 2005) |

| Case | Minimum (Fiscal Year) | Maximum (Fiscal Year) |
|---|---|---|
| Case D | 1,367 (FY 2003) | 62,524 (FY 2005) |
| Case E | 0 (FY 2004) | 93,786 (FY 2007) |
| Case F | 0 (FY 2004) | 62,524 (FY 2007) |
| Case G | 0 (FY 2004 to FY 2017) | 1,000 (FY 2003) |

7) Estimate of CFET

The CFET is composed of two major parts: UNTF and the domestic revenue. Therefore, in accordance with the fluctuation of the amount of UNTF, the level of CFET will be estimated. Based on the alternative conditions for UNTF, the following three cases of UNTF were estimated. Table M.2-19 to Table M.2-21 indicate the results of the estimate of CFET for these three cases.

Estimate of CFET

(unit : US$ thousand)

| Case | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|
| Optimistic | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 |
| Standard | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 |
| Pessimistic | 0 | 0 | 0 | 0 | 0 |

8) Estimate of TFET

Since TFET is intended to function as a fund for the basic initial post-conflict reconstruction of East Timor, it is very unlikely that the donor community will continue to provide the same level of TFET even after all the disbursements of the currently-committed US$ 168.9 million. Taking this situation into account, the following three cases of TFET were estimated. Table M.2-22 indicates the results of the estimate of TFET for these three cases.

Estimate of TFET

(unit : US$ thousand)

| Case | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|
| Optimistic | 16,894 | 16,894 | 16,894 | 16,894 | 16,894 |
| Standard | 8,447 | 8,447 | 8,447 | 8,447 | 8,447 |
| Pessimistic | 0 | 0 | 0 | 0 | 0 |

9) Estimate of Other Direct Bilateral Aid

Since the donor community intends to gradually downsize their direct bilateral aid, it is very unlikely that the donor community will continue to provide the same level of even after all the disbursements of the currently-committed US$ 180.0 million during the period from the fiscal year 2000 to 2003. Taking this situation into account, the following three cases of other direct bilateral aid were estimated. Table M.2-23 indicates the results of the estimate of other direct bilateral aid for these three cases.

Estimate of Direct Bilateral Aid

(unit : US$ thousand)

| Case | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|
| Optimistic | 40,004 | 40,004 | 40,004 | 40,004 | 40,004 |
| Standard | 26,670 | 26,670 | 26,670 | 26,670 | 26,670 |
| Pessimistic | 13,334 | 13,334 | 13,334 | 13,334 | 13,334 |

10) Estimate of Budgetary Allocation for Agricultural Sector

The last factor which decides the scale of the available financial resources for the agricultural sector is the estimate of the allocated budgetary share for the agricultural sector. Since the ETPA has other prioritized development components such as education, health and other social services as well, it cannot only increase budgetary share of the agricultural sector. According to the combined sources budget for the fiscal year 2001, the budgetary share of the agricultural sector is approximately 9.8 percent. Table M.2-24 indicates the results of the estimate of the budgetary allocation for the agricultural sector for these three cases.

Budgetary Share of Agricultural Sector in the Combined Sources

(unit : %)

| Case | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|
| Optimistic | 11.8 | 11.8 | 11.8 | 11.8 | 11.8 |
| Standard | 9.8 | 9.8 | 9.8 | 9.8 | 9.8 |
| Pessimistic | 7.9 | 7.9 | 7.9 | 7.9 | 7.9 |

11) Estimate of Available Financial Resources

By the combined estimate of CFET, TFET, other bilateral aid, UN assessed fund, and the revenue from the Timor Gap, and allocated share for the agricultural sector, 21 cases of the available resources for the agricultural sector under seven off-shore (Timor Gap) revenue cases have been estimated. Study results are given in the following table.

The Case A is the most optimistic case for the revenue from the Timor Gap, which is estimated by the Central Fiscal Authority. Case A includes Case A-I in which all the factors for other on-shore revenues and allocation for the agricultural sector are the most optimistic, Case II in which those factors are standard, and Case III in which those factors are the most pessimistic.

Table M.2-25, Table M.2-26, and Table M.2-27 indicate the detailed estimates of Case A-I, Case A-II and Case A-III, respectively, indicating that the estimated allocated expenditure available for the agricultural sector for Case A-I, Case A-II and Case A-III would peak out at US$ 26,573 thousand for the fiscal year 2006, US$ 16,846 thousand for the fiscal year 2006, and US$ 13,154 thousand for the fiscal year 2006, respectively.

Estimate of Financial Resources for Agricultural Sector

| Case | | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|---|
| A | I | 14,398 | 18,534 | 26,516 | 26,573 | 22,430 |
| | II | 8,998 | 10,175 | 16,807 | 16,846 | 13,384 |
| | III | 4,798 | 7,839 | 13,129 | 13,154 | 10,376 |
| B | I | 14,075 | 12,211 | 12,085 | 18,142 | 26,644 |
| | II | 8,729 | 4,906 | 4,781 | 9,821 | 16,895 |
| | III | 4,583 | 3,624 | 3,508 | 7,534 | 13,186 |
| C | I | 14,317 | 16,953 | 22,828 | 22,885 | 19,795 |
| | II | 8,931 | 8,857 | 13,733 | 13,773 | 11,188 |
| | III | 4,744 | 6,785 | 10,670 | 10,695 | 8,620 |
| D | I | 14,236 | 15,373 | 19,140 | 19,196 | 17,160 |
| | II | 8,864 | 7,540 | 10,660 | 10,699 | 8,992 |
| | III | 4,691 | 5,731 | 8,211 | 8,236 | 6,863 |
| E | I | 14,075 | 12,211 | 12,005 | 16,562 | 22,955 |
| | II | 8,729 | 4,906 | 4,714 | 8,503 | 13,822 |
| | III | 4,583 | 3,624 | 3,455 | 6,480 | 10,727 |
| F | I | 14,075 | 12,211 | 11,924 | 14,981 | 19,267 |
| | II | 8,729 | 4,906 | 4,647 | 7,186 | 10,748 |
| | III | 4,583 | 3,624 | 3,401 | 5,426 | 8,268 |
| G | I | 14,193 | 12,211 | 11,763 | 11,819 | 11,890 |
| | II | 8,828 | 4,906 | 4,512 | 4,552 | 4,601 |
| | III | 4,662 | 3,624 | 3,293 | 3,318 | 3,350 |

The Case B is the 2nd most optimistic case for the revenue from the Timor Gap with 2-year delay in the revenue accrual. Case B includes Case B-I in which all the factors for other on-shore revenues and allocation for the agricultural sector are the most optimistic, Case B-II in which those factors are standard, and Case B-III in which those factors are the most pessimistic.

Table M.2-28, Table M.2-29, and Table M.2-30 indicate the detailed estimates of Case B-I, Case B-II and Case B-III, respectively, indicating that the estimated allocated expenditure available for the agricultural sector for Case B-I, Case B-II and Case B-III would peak out at US$ 26,644 thousand for the fiscal year 2007, US$ 16,895 thousand for the fiscal year 2007, and US$ 13,186 thousand for the fiscal year 2007, respectively. The shift of the peak from 2006 to 2007 is due to the delayed accrual of the revenue from the Timor Gap.

The Case C is the 3rd most optimistic case for the revenue from the Timor Gap with 25 percent decrease in the revenue. Case C includes Case C-I in which all the factors for other on-shore revenues and allocation for the agricultural sector are the most optimistic, Case C-II in which those factors are standard, and Case C-III in which those factors are the most pessimistic.

Table M.2-31, Table M.2-32, and Table M.2-33 indicate the detailed estimates of Case C-I, Case C-II and Case C-III, respectively, indicating that the estimated allocated expenditure available for the agricultural sector for Case C-I, Case C-II and Case C-III would peak out at US$ 22,885 thousand for the fiscal year 2006, US$ 13,773 thousand for the fiscal year 2006, and US$ 10,695 thousand for the fiscal year 2006, respectively. The decrease in the peaked accrual

of the revenue is mainly due to the downsized accrual of the revenue from the Timor Gap.

The Case D is the 4th most optimistic case for the revenue from the Timor Gap with 50 percent decrease in the revenue. Case D includes Case D-I in which all the factors for other on-shore revenues and allocation for the agricultural sector are the most optimistic, Case D-II in which those factors are standard, and Case D-III in which those factors are the most pessimistic.

Table M.2-34, Table M.2-35, and Table M.2-36 indicate the detailed estimates of Case D-I, Case D-II and Case D-III, respectively, indicating that the estimated allocated expenditure available for the agricultural sector for Case D-I, Case D-II and Case D-III would peak out at US$ 19,196 thousand for the fiscal year 2006, US$ 10,699 thousand for the fiscal year 2006, and US$ 8,236 thousand for the fiscal year 2006, respectively. The decrease in the peaked accrual of the revenue is mainly due to the downsized accrual of the revenue from the Timor Gap.

The Case E is the 3rd most pessimistic case for the revenue from the Timor Gap with 25 percent decrease in the revenue and 2-year revenue accrual. Case E includes Case E-I in which all the factors for other on-shore revenues and allocation for the agricultural sector are the most optimistic, Case E-II in which those factors are standard, and Case E-III in which those factors are the most pessimistic.

Table M.2-37, Table M.2-38, and Table M.2-39 indicate the detailed estimates of Case E-I, Case E-II and Case E-III, respectively, indicating that the estimated allocated expenditure available for the agricultural sector for Case E-I, Case E-II and Case E-III would peak out at US$ 22,955 thousand for the fiscal year 2007, US$ 13,822 thousand for the fiscal year 2007, and US$ 10,727 thousand for the fiscal year 2007, respectively. The decrease in the peaked accrual of the revenue is mainly due to the downsized accrual of the revenue from the Timor Gap, and the shift of the peak from 2006 to 2007 is due to the delayed accrual of the revenue.

The Case F is the 2nd most pessimistic case for the revenue from the Timor Gap with 50 percent decrease in the revenue and 2-year revenue accrual. Case F includes Case F-I in which all the factors for other on-shore revenues and allocation for the agricultural sector are the most optimistic, Case F-II in which those factors are standard, and Case F-III in which those factors are the most pessimistic.

Table M.2-40, Table M.2-41, and Table M.2-42 indicate the detailed estimates of Case F-I, Case F-II and Case F-III, respectively, indicating that the estimated allocated expenditure available for the agricultural sector for Case F-I, Case F-II and Case F-III would peak out at US$ 19,267 thousand for the fiscal year 2007, US$ 10,748 thousand for the fiscal year 2007, and US$ 8,268 thousand for the fiscal year 2007, respectively. The decrease in the peaked accrual of the revenue is mainly due to the downsized accrual of the revenue from the Timor Gap. The decrease in the peaked accrual of the revenue is mainly due to the downsized accrual of the revenue from the Timor Gap, and the shift of the peak from 2006 to 2007 is due to the delayed accrual of the revenue.

The Case G is the most pessimistic case without the revenue from the Timor Gap. Case G includes Case G-I in which all the factors for other on-shore revenues and allocation for the agricultural sector are the most optimistic, Case G-II in which those factors are standard, and Case G-III in which those factors are the most pessimistic.

Table M.2-43, Table M.2-44, and Table M.2-45 indicate the detailed estimates of Case G-I, Case G-II and Case G-III, respectively, indicating that the estimated allocated expenditure available for the agricultural sector for Case G-I, Case G-II and Case G-III would peak out at US$ 14,193 thousand for the fiscal year 2003, US$ 8,828 thousand for the fiscal year 2003, and US$ 4,662 thousand for the fiscal year 2003, respectively. Since Case G does not include the large income from the Bayu-Undan Phase 1 project, the estimate of the available financial resources for the agricultural sector is relatively low.

12) Conclusion at the Draft Development Plan Report (1)

Based on the analysis at the previous section, Figure M.2-1 to Figure M.2-7 illustrate all the cases from Case A to Case G. The below table summarizes the results of Case A-I, which is the most optimistic case, and Case G-III, which is the most pessimistic case.

Estimate of Available Financial Resources for Agricultural Sector

(unit : thousand US$)

| Case/Financial Year | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|
| Case A-I | 14,398 | 18,534 | 26,516 | 26,573 | 22,430 |
| Case G-III | 4,662 | 3,624 | 3,293 | 3,318 | 3,350 |

The results show that the available financial resources for the agriculture sector analyzed at the time of the Draft Development Plan Report (1) range from 4,662 thousand US$ to 26,573 thousand US$ during the period from the financial year 2003 to 2007, indicating that the planned integrated agricultural development plan should within these financial limitations.

### 4.2.2 Additional Analysis on Financial Aspects in Draft Development Plan Report (2)

The analysis in the former section was conducted based on the available data and information as of October 2001 in the Draft Development Plan Report (1), and, therefore, the analysis does not reflect the rapidly changing situation thereafter. Two major events took place, which largely affect the analysis on available financial resources. The first major event was the dispatch of the Agricultural Joint Donor Mission in November 2001, and the second major event was the Oslo donor meeting in December 2001.

While, in the Agricultural Joint Donor Mission, major donor countries and organizations announced the bilateral aid plan for the agriculture sector during the period from

the financial year 2001 to 2005, in the Oslo donor meeting, the scale of CFET, TFET and the overall bilateral aid was updated. In response to these major events, the related data would be updated so that the additional analysis could obtain more accurate results.

1) Financial Cash Flow for East Timor after Oslo Donor Meeting

After the Oslo donor meeting, the financial cash flow of East Timor was well re-organized by the Ministry of Finance. The financial cash flow will be divided into the general administrative fund as well as the small-scale investment and development fund covered by CFET, and the large-scale investment and development fund covered by TFET, the bilateral aid and multi-lateral aid. Figure M.2-8 is a simplified diagram, which illustrates the financial cash flow in East Timor. It should be reminded that apart from the taxes levied on the sales and profits from the Timor Gap project, the special "Saving Fund" was set up to manage the Royalty revenue (FTP) from the Timor Gap project. Although there is no final agreement on how to utilize this fund, at present, two ways for the management of this fund are under study. The first way is that the principal of and interest revenue from the fund will be directly utilized for the administrative, investment and development expenditure under CFET. The second way is that only the interest revenue from the fund will be directly utilized for the administrative expenditure under CFET. The second way is so-called "Norwegian way". Figure M.2-9 and Figure M.2-10 illustrate the simplified diagrams of the first way and the second way, respectively.

2) Conditions for Alternative Cases

In line with the financial cash flow diagram which was re-organized after the Oslo donor meeting, there are mainly two determinant factors to decide the financial scale available for the agriculture sector. The first determinant factor is whether or not the royalty revenue from the Timor Gap project will be utilized for the administrative, investment and development expenditure under CFET. The second determinant factor is the estimate of the level of the bilateral aid for the agriculture sector committed by the second Agricultural Joint Donor Mission, while the additional amount for TFET will not be committed by donors.

Table M.2-46 shows the conditions for alternative cases under these two determinant factors, and the below table is the summary.

Case for Royalty Revenue

| Case | Description |
|---|---|
| Case A | Both Principal and interests of royalty revenue (FTP) from Timor Gap project will be utilized for CFET. |
| Case B | Only interests of royalty revenue (FTP) from Timor Gap project will be utilized for CFET. (Norwegian Way) |

Case for Level of Bilateral Aid for Agriculture Sector

| Case | Description |
|---|---|
| Case 1 | The level is based on the commitment by the second Agricultural Joint Donor Mission. |
| Case 2 | 90% level of Case 1 |
| Case 3 | 80% level of Case 2 |

3) Summary of Alternative Cases for Analysis

As a result of the combinations of the above conditions, the following six cases will be the final alternative cases for the analysis on the estimate of available financial resources for the agriculture sector, which is tabulated in Table M.2-47, and summarized below.

Summary of Alternative Cases for Analysis

| Royalty | Bilateral Aid | Cases for Analysis |
|---|---|---|
| Case A | Case 1 | A-1 |
| Case B | Case 2 | A-2 |
| Case C | Case 3 | A-3 |
| Case D | Case 4 | B-1 |
| Case E | Case 5 | B-2 |
| Case F | Case 6 | B-3 |

4) Estimate of CFET

The estimate of CFET was updated by using the latest figures forecasted by the Ministry of Finance in line with two cases (with and without the royalty revenue from the Timor Gap project included in CFET). While Table M.2-48 (Case A) indicates the estimate of CFET in case that the principal of the royalty revenue will be used for the investment and development budget under CFET, Table M.2-49 (Case B) indicates the estimate of CFET in case that the principal of the royalty revenue will not be used for the investment and development budget under CFET. The below tables are summaries of these two cases.

Case A (with the Royalty Revenue from the Timor Gap Project included in CFET)

(unit: thousand US$)

| Case/Financial Year | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|
| Overall CFET | 64,000 | 121,000 | 123,000 | 122,000 | 119,000 |
| Estimate of Allocation for Agricultural Sector in CFET | 1,216 | 2,299 | 2,337 | 2,318 | 2,261 |
| Share of Agriculture Sector (%) | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| Estimate of Allocation for Agriculture Sector at Oslo Donor Meeting | 1,920 | 1,911 | 1,911 | n.a. | n.a. |
| Estimate of Allocation for Agriculture Sector by MTFF | 2,128 | 2,185 | n.a. | n.a. | n.a. |

Case B (without the Rroyalty Revenue from the Timor Gap Project included in CFET)

(unit: thousand US$)

| Case/Financial Year | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|
| Overall CFET | 54,000 | 89,000 | 93,000 | 93,000 | 90,000 |
| Estimate of Allocation for Agricultural Sector in CFET | 1,026 | 1,691 | 1,767 | 1,767 | 1,710 |
| Share of Agriculture Sector (%) | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| Estimate of Allocation for Agriculture Sector at Oslo Donor Meeting | 1,920 | 1,911 | 1,911 | n.a. | n.a. |
| Estimate of Allocation for Agriculture Sector by MTFF | 2,128 | 2,185 | n.a. | n.a. | n.a. |

5) Estimate of Level of Bilateral Aid for Agriculture Sector

In addition to the estimate of TFET, the level of the bilateral aid was estimated by using the latest data provided by the Ministry of Finance. Table M.2-50 (Case 1) indicates the estimate of TFET/bilateral investment budget for the agriculture sector based on the donor's commitment by the second Agricultural Joint Donor Mission. Table M.2-51 (Case 2) and Table M.2-52 (Case 3) indicate the estimate of TFET/bilateral investment budget for the agriculture sector based on 90 percent level of Case 1 and 80 percent level of Case 1, respectively. Table M.2-53 outlines the commitment by major donor countries and organizations for the agriculture sector in the second Agricultural Joint Donor Mission. The below table is a summary for these estimates.

Estimate of TFET and Bilateral Investment Budget for Agriculture Sector

(*unit: thousand US$*)

| Case/Financial Year | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|
| Case 1 | 23,838 | 11,922 | 11,922 | 11,922 | 11,922 |
| Case 2 | 21,454 | 10,730 | 10,730 | 10,730 | 10,730 |
| Case 3 | 19,070 | 9,538 | 9,538 | 9,538 | 9,538 |

6) Estimate of Available Financial Resources for Agriculture Sector (Post-Oslo Version)

In conclusion, the scale of available financial resources for the agriculture sector was estimated for all the post-Oslo version cases. Table M.2-54 indicates and Figure M.2-11 illustrates the estimate of the scale of available financial resources for the agriculture sector, and the below table is a summary of the estimate.

Estimate of Scale of Available Financial Resources for Agriculture Sector

(unit: thousand US$)

| Case/Financial Year | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|
| A-1 | 25,054 | 14,221 | 14,259 | 14,240 | 14,183 |
| A-2 | 22,670 | 13,029 | 13,067 | 13,048 | 12,991 |
| A-3 | 20,286 | 11,837 | 11,875 | 11,856 | 11,799 |
| B-1 | 24,864 | 13,613 | 13,689 | 13,689 | 13,632 |
| B-2 | 22,480 | 12,421 | 12,497 | 12,497 | 12,440 |
| B-3 | 20,096 | 11,229 | 11,305 | 11,305 | 11,248 |

The results show that the available financial resources for the agriculture sector additionally analyzed for the Draft Development Plan Report (2) range from 11,229 thousand US$ to 25,054 thousand US$ during the period from the financial year 2003 to 2007, indicating that the planned integrated agricultural development plan should within these financial limitations.

7) Comparison of Financial Analysis between Pre-Oslo Version and Post-Oslo Version

It is indispensable to compare the result of the original financial analysis at the Draft Development Plan Report (1) (Pre-Oslo Version) and the result of the additional financial analysis at the Draft Development Plan Report (2) (Post-Oslo Version). Figure M.2-12 illustrates the comparison of these two versions.

Comparison of Financial Analysis between Pre-Oslo Version and Post-Oslo Version

(unit : thousand US$)

| Version | Case/financial Year | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|---|
| Pre-Oslo | Case A-I | 14,398 | 18,534 | 26,516 | 26,573 | 22,430 |
| Pre-Oslo | Case G-III | 4,662 | 3,624 | 3,293 | 3,318 | 3,350 |
| Post-Oslo | Case A-1 | 25,054 | 14,221 | 14,259 | 11,305 | 14,183 |
| Post-Oslo | Case B-3 | 20,096 | 11,229 | 11,305 | 11,305 | 11,248 |

It can be also observed that after the Oslo donor meeting, it became clear that there would be no more additional TFET, implying that the available financial resources for the agriculture sector after the financial year 2004 onward in case of the post-Oslo version is considerably less than those in case of the pre-Oslo version.

### 4.2.3 *Analysis on Food Security Policy Aspects*

1) Basic Concept of Food Security Policy for Integrated Agricultural Development Plan

It is absolutely necessary to study a clear-cut food security policy for East Timor, where the agriculture sector occupies the majority of the economy, and the percentage of households below the poverty line is approximately 40 percent, when the integrated agricultural development plan is formulated. The policy framework in the controversial National Development Plan in the agriculture sector as well as the policy framework suggested by the recent Agricultural Joint Donor Mission should be carefully examined for consistency with the food security policy. Basically, the food security policy should be consistent with these critical policy frameworks.

a) Consistency with the Policy Framework for the National Development Plan

The basic policy framework for the National Development Plan for the agriculture sector is as follows.

i) The vision for the agriculture sector is that by the year 2020 East Timor will have sustainable and prosperous agricultural industries, including fisheries and forestry, that support improved living standards for the nation's people.

ii) The food security as well as the food self-sufficiency is one of the most important goals among seven goals for the development of the agriculture sector.

iii) The guiding principles for the development of the agriculture sector is sustainability, self-reliance, efficiency, coordination among donors, partnership, equity, respect for traditional values, and transparency.

As far as the food security policy is concerned, the National Development Plan for the agriculture sector emphasized the sustainable improvement in the self-sufficiency of rice, which is the staple crop in East Timor.

b) Consistency with the Policy Framework for the Agricultural Joint Donor Mission

In November 2001, the second Agricultural Joint Donor's Mission, which was composed of eight donor countries and organizations as well as international NGOs was dispatched in order to recommend the basic strategies in the agriculture sector. The major policy recommendations by the Agricultural Joint Donor Mission were as follows.

i) The programs of the agricultural development should be shifted from the large-scale investment-type programs during the recovery phase to the sustainable programs in terms of both economy and environment.

ii) The food security policy is not simply a rapid improvement in the self-sufficiency, but covers a wide range of complex factors, which will require the diversified and

comprehensive approach.

iii) The food security at the community and household level should be achieved by mitigating the vulnerability of households against external shocks such as climate and economic change.

As far as the food security policies are concerned, the policy recommendations by the Agricultural Joint Donor Mission emphasized the comprehensive approach of the food security for household and community level, which includes income generation, crop diversification, improvement of rural infrastructure, quality improvement, mitigation of post-harvest loss, and improvement of access to market.

c) Policy Options under Food Security Policies

It is essential to explore the appropriate combinations of food security policies following both basic policy concepts of the National Development Plan for the agriculture sector and the Agricultural Joint Donor Mission.

Taking into account the fact that East Timor is presently not capable of self-supplying its staple food, rice, it would be difficult for East Timor to rapidly achieve the perfect self-sufficiency of rice in a short-term. When it is taken into account the fact that both National Development Plan for the agriculture sector and the Agricultural Joint Donor Mission emphasized the "sustainable" and "wide-range " approach for the food security in East Timor, the sustainable increase in the self-sufficiency ratio of rice as well as the comprehensive food security policies such as quality improvement, mitigation of post-harvest loss, improvement in access to market, etc. would be recommended so that the food security at community and household levels is well kept.

In general, the food security policy is divided into the narrowly-defined economic policy options and the broadly-defined agricultural policy options. Economic policy options include tariff, import restriction, subsidy for producers, and subsidy for exporters, while agricultural policy options include, enlargement of irrigated area, productivity improvement, improvement in access to market, mitigation of post-harvest loss, and quality improvement, etc. The below table shows major policy options for food security in developing countries.

Major Policy Options for Food Security

| Economic Policy Options | Agricultural Policy Options |
|---|---|
| 1. Tariff | 1. Enlargement of irrigated area |
| 2. Import restriction | 2. Productivity improvement |
| 3. Subsidy for producers | 3. Improvement in access to market |
| 4. Subsidy for exporters | 4. Mitigation of post-harvest loss |
| | 5. Quality improvement |

2) Analysis on Food Security Aspect

Out of the above-mentioned policy options for the food security, the tariff policy was mainly discussed as an integral part of the economic policy options under the food security policy in East Timor.

a) Possible Policy Options for East Timor

The possible policy package to project the East Timorese agriculture will be examined. As for the food security policies, there are a lot of lessons from the review of the Indonesia's central government agricultural policies, which could be helpful to East Timor. Four realistic options for the effective tariff protection rates on rice are proposed for the analysis: i) perfect open economy policy, ii) open economy policy, iii) selective protection policy, and iv) closed economy policy. Figure M.2-13 illustrates the transition of tariff rates on rice of each option.

i) Perfect Open Economy Option (Option-1)

In this "Perfect Open Economy Policy Option", the tariff level on rice will be adjusted to the same level as the liberalized tariff schemes in the framework of the neighboring economic bloc of AFTA (ASEAN Free Trade Area). In the framework of AFTA, the less developed countries in ASEAN such as Cambodia, Laos, and Myanmar are required to reduce the tariff of almost all the commodities to below five percent in 2008, and AFTA requires member countries to make the whole ASEAN market enter into the zero tariff zone in 2015. Although East Timor is not a member of ASEAN, the tariff reduction scheme in accordance with AFTA would be "Perfect Open Economy Option" for East Timor. Figure M.2-14 illustrates the simulation of tariff and price change by tariff for Option-1.

ii) Open Economy Policy Option (Option-2)

The present East Timorese Government's tariff on rice stands at 10 percent ad valorem comprising of five percent import duty and five percent sales tax. In this "Open Economy Policy Option", the tariff level on rice will be kept at the present level of 10 percent ad valorem, which is relatively in line with the market-oriented and outbound/open economic policy. Figure M.2-15 illustrates the simulation of tariff and price change by tariff for Option-2.

iii) Selective Protection Policy Option (Option-3)

Even if Indonesia and Philippines are members of AFTA, these countries do not selectively exclude rice from the inclusion list of AFTA, thereby leaving rice tariff standing at relatively higher level of roughly 30 percent ad valorem. In this "Selective Protection Policy Option", the tariff level on rice will be increased to the same level as the rather protective tariff schemes outside the framework of the liberalized AFTA scheme. Figure M.2-16 illustrates the simulation of tariff and price change by tariff for Option-3.

iv) Closed Economy Policy Option (Option 4)

In the global economy, there are some small-sized economies which completely protect farmers from imported agricultural products. In this "Closed Economy Policy Option", the import-restrictive extremely higher tariff rate of 100 percent on rice will be levied immediately after 2002. Figure M.2-17 illustrates the simulation of tariff and price change by tariff for Option-4.

b) Procedures for Analysis of Self-sufficiency Ratio of Rice

The demand for imported rice would be shifted upward/downward due to the reduction/increase in the tariff rate ad valorem in accordance with each policy option (Option-1, Option-2, Option-3, and Option-4). The below table shows the estimated demand of milled rice under the original integrated agricultural development plan.

Estimated Demand of Milled Rice

(unit : ton)

| Year | Total Demand | Local Rice | Imported Rice |
|---|---|---|---|
| 2007 | 71,010 | 47,114 | 23,896 |
| 2017 | 88,689 | 62,914 | 25,775 |

The tariff on rice would increase the consumer's price of rice, and would shift the demand of rice. Since rice is often regarded as an inferior good by consumers in industrialized countries, the income elasticity of demand of rice is often negative. However, the empirical evidences for the same-level GDP-per-capita developing countries as East Timor show that the price elasticity of demand of rice ranges from 0.378 to 0.520 in the said developing countries. The analysis of the effect of the tariff on the imported rice by East Timor would be made in accordance with the following three cases of the price elasticity of demand of rice under four policy options (Option-1, Option-2, Option-3, and Option-4).

Alternative Price Elasticity of demand of Rice

| PED-1 | PED-2 | PED-3 |
|---|---|---|
| Higher Price Elasticity of Demand of Rice | Average Elasticity of Demand of Rice | Lower Elasticity of Demand of Rice |
| 0.520 | 0.443 | 0.378 |

Source : Estimate by Study Team
PED-1 : Higher case of price elasticity of demand
PED-2 : Average case of price elasticity of demand
PED-3 : Lower case of price elasticity of demand

After applying these three cases of price elasticity of demand of rice to each policy option, the demand for the imported rice would be recalculated so that the total demand of rice would also be recalculated, thereby obtaining the self-sufficiency ratio of rice under each price elasticity of demand and each policy option.

c) Results of Analysis of Self-Sufficiency Ratio of Rice

i) Perfect Open Economy Option (Option-1)

The estimated self-sufficiency ratio of rice under "Perfect Open Economy Policy Option" was calculated as below. Figure M.2-18 illustrates the estimated price and demand index of rice, and Figure M.2-18 illustrates the estimated self-sufficiency-ratio of rice under "Perfect Open Economy Policy Option". The result shows that due to the protection of rice by the extremely higher tariff on rice, self-sufficiency ratio of rice will increase to 70.0 percent, 70.1 percent, and 70.2 percent in 2017 for PED-1, PED-2, and PED-3, respectively.

Estimate of Self-sufficiency Ratio of Rice (Option-1 : Perfect Open Economy)

| Year | SSR (PED-1) | SSR (PED-2) | SSR (PED-3) |
|---|---|---|---|
| 2003 | 45.5 % | 45.5 % | 45.5 % |
| 2007 | 66.3 % | 66.3 % | 66.3 % |
| 2017 | 70.0 % | 70.1 % | 70.2 % |

SSR : Self-Sufficiency Ratio

ii) Open Economy Policy Option (Option-2)

In the same manner as Option-1, the estimated self-sufficiency ratio of rice under "Open Economy Policy Option" was calculated as below. Figure M.2-19 illustrates the estimated price and demand index of rice, and Figure M.2-23 illustrates the estimated self-sufficiency-ratio of rice under "Open Economy Policy Option". The result shows that, in this option, there would be no change for the self-sufficiency ratios of rice compared with the original plan due to the fact that there would be no substantial change of tariff on rice during the projected period.

Estimate of Self-Sufficiency Ratio of Rice (Option-2 : Open Economy)

| Year | SSR(PED-1) | SSR(PED-2) | SSR(PED-3) |
|---|---|---|---|
| 2003 | 45.5 % | 45.5 % | 45.5 % |
| 2007 | 66.3 % | 66.3 % | 66.3 % |
| 2017 | 70.9 % | 70.9 % | 70.9 % |

iii) Selective Protection Policy Option (Option 3)

The estimated self-sufficiency ratio of rice under "Selective Protection Policy Option" was calculated as below applying the same manner as mentioned above. Figure M.2-20 illustrates the estimated price and demand index of rice, and Figure M.2-24 illustrates the estimated self-sufficiency-ratio of rice under "Open Economy Policy Option". The result shows that, due to the protection of rice by the higher tariff on rice, self sufficiency ratios of rice will increase to 73.0, 72.6, and 72.4 percents in 2017 for PED-1, PED-2, and PED-3, respectively.

Estimate of Self-Sufficiency Ratio of Rice (Option-2 : Open Economy)

| Year | SSR(PED-1 | SSR(PED-2) | SSR(PED-3) |
|---|---|---|---|
| 2003 | 63.5 % | 67.0 % | 57.3 % |
| 2007 | 80.4 % | 78.0 % | 76.0 % |
| 2017 | 83.6 % | 81.4 % | 79.7 % |

iv) Closed Economy Policy Option (Option-4)

The estimated self-sufficiency ratio of rice under "Closed Economy Policy Option" was calculated as below. Figure M.2-21 illustrates the estimated price and demand index of rice, and Figure M.2-25 illustrates the estimated self-sufficiency-ratio of rice under "Closed Economy Policy Option". The result shows that, due to the protection of rice by the extremely higher tariff on rice, self-sufficiency ratios of rice will increase to 83.6, 81.4, and 79.7 percent in 2017 for PED-1, PED-2, and PED-3, respectively.

Estimate of Self-Sufficiency Ratio of Rice (Option-2 : Open Economy)

| Year | SSR(PED-1) | SSR(PED-2) | SSR(PED-3) |
|---|---|---|---|
| 2003 | 63.5 % | 67.0 % | 57.3 % |
| 2007 | 80.4 % | 78.0 % | 76.0 % |
| 2017 | 83.6 % | 81.4 % | 79.7 % |

d) Conclusion of Analysis on Food Security Policy Aspect

The empirical evidence which could be gained through the experiences of the Indonesia's policy clearly illustrates that it is not sustainable to maintain the subsidized agricultural protection policies such as over protection of rice, and the fact that the East Timorese Government has no financial resources to subsidize farmers suggest that it is nor realistic to implement the large-scale subsidizing program.

Furthermore, there is some evidence that strict self-sufficiency is not the best way of achieving food security. Exclusive reliance on domestic production would force all the costs of adjusting to shocks from bad climate, pests and other production risks into the domestic market, to be borne particularly by low-income consumers.

In addition to these empirical evidences, the above analysis clearly shows that:

- Even if the East Timorese Government opts for the perfect open economy policy, it will not seriously damage the rice producers in East Timor;
- Even if the East Timorese Government opts for the closed economy policy, it will not achieve the self-sufficiency of rice due to the physical limitation;
- Even if the East Timorese Government opts for the selective protection policy, it will not achieve the self-sufficiency of rice due to the physical limitation; and
- When it is taken into account the fact that the competitiveness of agriculture of East

Timor is relatively weaker than that of ASEAN member countries, "Perfect Open Economy Policy Option" is not realistic option.

Taking into the above analysis, it was concluded that the continuation of the present tariff level is on the right truck, adding that the present 10 percent tariff ad valorem is the balanced level of the tariff on rice, thereby implying that Option-2 is the proper tariff policy for the agricultural sector of East Timor. However, due to unavailability for the required data for the analysis, it is also true that the above analysis could not accurately justify the present tariff level of 10 percent.

3) Additional Analysis on Food Security Aspect

After the second field survey, the results of two important surveys were disclosed. They are the village survey, whose final report was disclosed in November 2001 and the poverty assessment household survey, whose draft final report was disclosed in February 2002. These surveys made it possible to analyze the effectiveness of the food security policies in addition to the tariff policy analysis conducted in the Draft Development Plan Report (1). By utilizing the results of these detailed surveys, the further analysis on food security policy options were conducted.

a) Prices and Tariff

Figure M.2-26 illustrates the price comparison between local rice and imported rice based on the result of the village survey. The results indicate;

- 49 percent of households reported buying prices of local rice are same as those of imported rice,
- 36 percent of households reported the buying prices of local rice are lower than those of imported rice, and
- 15 percent of household reported the buying prices of local rice is higher than those of imported rice.

In addition to the results of the village survey, the draft report of the poverty assessment household survey also precisely reported the price comparison between local rice and imported rice. Figure M.2-27 illustrates the price comparison between local rice and imported rice on national average, while Figure M.2-28 illustrates the region-wise price comparison between local rice and imported rice. The results indicate;

- National average price of local rice is 3,587 Rp, which is quite similar to that of imported rice at 3,590 Rp;
- In urban area, the average price of local rice is 3,074 Rp, which is higher than that of imported rice at 2,815 Rp;
- In rural highland area, the average price of local rice is 3,571 Rp, which is lower than that of imported rice at 3,959 Rp; and

- In rural lowland areas, the average price of local rice is 3,802 Rp, which is almost same as that of imported rice at 3,805 Rp.

It is estimated that, due to the higher transportation cost as well as scarcity of imported rice in rural highland areas, the average price of imported rice is higher than that of local rice in rural highland areas. These household-level price data of rice make it possible to more accurately analyze the optimum level of the tariff on rice. Since Dili and Baucau are main markets of rice in East Timor, in order to measure the optimum level of the tariff rate on rice, the simulations of the tariff adjustment of retailed rice at Dili and Baucau were conducted.

Figure M.2-29(Case 1), Figure M.2-30(Case 2), and Figure M.2-31(Case 3) illustrate the simulations of tariff rates and impacts on the price differences between local rice and imported rice. All the prices for the simulation are adjusted to c.i.f Dili prices by using 27 percent mark-up from c.i.f prices to retail prices at Dili, which is reported by FAO rice study. Case 2 is the case for 10 percent downward adjustment of prices of local rice taking into account the quality difference factor, while Case 3 is the case for 20 percent downward adjustment of prices of local rice taking into account the quality difference factor. The below table shows the summary of the results of these simulations, indicating that even in case of no quality adjustment, the tariff should be lifted up to the level of 30 percent in order to make the price difference between local rice and imported rice zero.

Results of Tariff Case Study

(unit: %)

| | Tariff = 0% | Tariff = 5% | Tariff = 10% | Tariff = 20% | Tariff = 30% |
|---|---|---|---|---|---|
| Case 1 | 23.1 | 19.2 | 15.4 | 7.7 | -0.7 |
| Case 2 | 30.1 | 26.6 | 23.1 | 16.1 | 8.5 |
| Case 3 | 35.9 | 32.7 | 29.5 | 23.1 | 16.1 |

However, although the price data suggests the present tariff level is not sufficient to protect the local rice in terms of price, the optimum level of tariff should be carefully examined through the following further specific studies.

- Price elasticity of demand of rice should be calculated to accurately grasp the impact of tariff change on the demand of rice.
- Substitute effect from rice to other food crops should be accurately grasped.
- Quality difference between local rice and imported rice should be numerically verified.
- The equilibrium point of tariff on rice which maximizes the national welfare should be calculated taking into account both producers' increase in revenue and consumers' increase in expenditure, since the majority of households in East Timor are rice producers as well as rice consumers.
- Effect on rice consuming families and rural peoples living in mountainous areas to be considered as the most low level of living standard.

b) Preference and Quality

It is widely reported that the quality of local rice is much lower than that of imported rice. Figure M.2-32 and Figure M.2-33 indicates the weekly expenditure for the very poor income household group (Quintile 1) and that for the wealthy income group household group (Quintile 5), respectively. The results indicate that 57 percent of the weekly expenditure for the very poor income household group is spent on imported rice, while only six percent of the weekly expenditure for the same group is spent on local rice. It clearly demonstrates that the East Timorese consumers prefer imported rice to local rice in terms of quality, taking into account the fact that the average price of imported rice is quite similar to that of local rice.

Figure M.2-34 indicates percentage of households with use of farm inputs, indicating that even in the most wealthy income household group, the percentage of households with use of manure, fertilizers, pesticides, and herbicides are extremely low, which badly affects the quality of rice and other food crops.

Furthermore, Figure M.2-37 indicates the weekly consumption of rice by income-wise household group, and the below table is the summary. It clearly indicates that the income elasticity of imported rice is much higher than that of local rice, implying that the consumers in East Timor prefer imported rice to local rice in terms of quality and other non-price factors.

Weekly Consumption of Rice by Income-wise Household Group

(unit: kg/week)

| Category | Quintile 1 | Quintile 2 | Quintile 3 | Quintile 4 | Quintile 5 |
|---|---|---|---|---|---|
| Local Rice | 0.05 | 0.11 | 0.10 | 0.17 | 0.14 |
| Imported Rice | 0.49 | 0.84 | 1.09 | 1.33 | 1.93 |

c) Post-Harvest Loss

Figure M.2-35 indicates the loss structure of local rice reported by the poverty assessment household survey, illustrating that the post harvest loss is seven percent on an average. Furthermore, M.2-36 indicates the structure of usage of local rice by household category based on the income quintile also reported by the poverty assessment household survey, illustrating that the average post-harvest loss in the poorest quintile households is 12 percent, while that in the richest quintile is only five percent. Both results imply that the large post-harvest loss, especially in the poor, affects the food security.

d) Access to Market

Figure M.2-38 indicates the situation of accessibility to markets on national average, illustrating that the average time to main markets in rainy season, the average time to main markets in non-rainy season, and the average distance to main markets are 128 minutes, 121 minutes, and 31 km, respectively. The results clearly show the nation-wide poor access to main markets, demanding the urgent improvement of rural roads to effectively transport local rice as

well as other food crops.

These comprehensive analysis strongly suggest that the present agriculture sector of East Timor had a wide range of constraints for the food security, and the food security policies should be comprehensive and wide-range which cover income generation, improvement of rural infrastructure such as access to markets, quality improvement, and mitigation of post-harvest loss etc.

### 4.2.4 Analysis on Poverty Reduction Aspects

As discussed in the section 4.1, East Timor will shortly generate the huge amount of gas and oil money from the Timor Gap projects. The name "Dutch Disease" is applied to the negative effects that use of income from natural resources may have on the industrial sectors that export or produce in competition with foreign producers. The concept demonstrates the boom/bust cycle that often follows an export boom named the "Dutch Disease" after the experiences of natural gas discoveries in the Netherlands.

The Dutch experience suggests that sudden foreign currency inflows stimulate the economy and raise all prices. The increased supply of foreign funds helps strengthen the exchange value and all traded goods, imports and exports, become relatively cheaper. In other words, imports become cheap compared to domestic production and export earnings drop relatively in local currency terms, due to the export boom, driven gain in the value of the local currency. The net result is that non-traded goods such as house rent, transport, health facilities etc. become expensive. It creates an inflationary pressure to the economy and even is capable of destroying the past achievements. It happened not only in Holland but also in Mexico, Venezuela and Nigeria and those nations have suffered severely in the 1970s.

This windfall revenue from an export boom may also create social problems such as corruption and weak governance. A typical example of Dutch Disease in terms of this symptom is Nigeria, where over the years the government has collected some US$ 300 billion in oil royalties, while the country remains near the bottom of the Human Development Index, providing a classic example of "Dutch Disease" in practice.

It is concerned about that the East Timorese version of the Dutch Disease will occur after the full-scale commercial production in the Bayu-Undan Phase 1 project in 2004. In the peak year around the fiscal year 2005 to 2006, the huge amount of the easy-going money will be transferred into the government's account. Unless these revenues are not effectively used for the productive sector such as the irrigation development in the agricultural sector, the symptom of the "Dutch Disease" will be incurred. It is likely that the rich in urban areas like Dili will get richer and the poor in the majority of rural areas will get poorer. If East Timor has not been preparing itself properly before the Bayu-Undan boom takes place, this will at the end bring unprecedented economic turmoil.

In this sense, the integrated agricultural development plan, which mainly targets the poor in rural areas, is critical in terms of the mitigation of the poverty and inequitable distribution of income in East Timor. Therefore, it is indispensable to overview the poverty situation in East Timor. Although the data and information on the poverty index for East Timor is limited, it can be estimated from the nation-wide poverty survey by the Government of Indonesia. The following figures indicate the estimates of basic poverty index for East Timor and nation-wide Indonesia.

Comparison of Poverty Index between East Timor and Nation-wide Indonesia (1999)

| Poverty Index | East Timor | Nation-wide Indonesia |
|---|---|---|
| Poverty Rate (%) | 46.73 | 23.43 |
| Poverty Gap (%) | 6.293 | 3.409 |
| Square Poverty Gap (%) | 1.838 | 0.937 |
| Gini Coefficient | 0.399 | 0.311 |

Source : BPS : Penyempurnan Metodologi Penghitungan Penduduk Miskin dan Profil Kemiskinan 1999, August 2000

It can be easily observed that the poverty rate of East Timor, which is the poverty head count rate of the population below the poverty line, is approximately twice as much as that of the nation-wide Indonesia, and it is one of the worst regions compared with the nation-wide Indonesia.

It is often argued that it is an alarming level if the *"Gini Coefficient"*, which is the typical indicator for the inequality of the society, exceeds 0.400. The Gini Coefficient of East Timor is approaching to this alarming level. *"Poverty Gap"* is an index for the depth of poverty which indicates how far the poor population is below the poverty line, and *"Square Poverty Gap"* is an index for the severity of poverty which indicates the distribution of income among the poor population. It is clearly argued that both indicators show that East Timor is one of the worst regions in terms of both depth and severity of poverty compared with the nation-wide Indonesia.