INTRODUCTION

- Indonesian exports of fresh fruits have been fluctuating, whilst the fruit production remained relatively stable.
- Major fresh fruit exports are mango, mangoesteen, pineapple, mango, banana, and papaya.
- Total export value is less than 1% world share market and about 10% out of the total volume of production.
- Major importing countries are Hongkong for mangoesteen, Malaysia for pineapple, and Middle East for mango and banana.
MAJOR IMPORTING COUNTRIES FOR INDONESIAN FRESH FRUITS EXPORTS

**Major importers of mangosteen from Indonesia, 2004**

- Hongkong: 70%
- China: 12%
- Malaysia: 8%
- Middle East: 8%
- Others: 2%

**Major importers of pineapple from Indonesia, 2004**

- Malaysia: 84%
- USA: 5%
- Europe: 3%
- Others: 2%

**Major importers of mango from Indonesia, 2004**

- Middle East: 72%
- Singapore: 18%
- Hongkong: 10%
- Others: 8%

**Major importers of banana from Indonesia, 2004**

- Middle East: 75%
- Europe: 18%
- Singapore: 5%
- Others: 2%
ISSUES

- Competition with domestic fruit market for the price of prime quality and total demand.
- Requirement of intensive effort for introducing and adoption of good practices due to more small-scale growers.
- Lack of integrated system to meet increasing high quality and food safety standard of importing countries.
- Driven to choose either supplying the export market or the domestic one.

STRENGTHENING INST. INVOLVED IN FRUIT DEVELOPMENT

- Foundation of CETROFS (Center for Tropical Fruits Studies) since 1997, stationed at IPB, sponsored by Min. Res. & Technol.
- Improved agricultural practices of mangoesteen small-scale growers increasing the export quality from 5% to 40% of production.
- International cooperations to implement GAP such as the project of Integrated Horticultural Development in Upland Area sponsored by JICA.
DEVELOPMENT OF NEW HYBRID VARIETIES

- New hybrid varieties has been released for mangoesteen, pineapple, papaya, banana and melon.
- Germ plasms have been collected: 61 pineapple genotypes, 75 papaya, and 230 banana.
- Genetic markers for some fruit varieties have been determined.
Research Results on Technological Development

DNA markers for sex expression in papaya

[Image showing DNA markers for sex expression in papaya]
SUPPLY CHAIN & COLD CHAIN DISTRIBUTION SYSTEM

- Construction of packing houses at the prod. center and sub-terminal agribusiness at district cities.
- Implementing cold chain distribution system from the growers to exporters.
- Improving sea-freight handling at the inter island connection.
- Introducing CA and MAS for sea-freight to importing countries.
Refrigerated container
RESEARCH AND DEVELOPMENT: NON-DESTRUCTIVE QUALITY EVALUATION

- Grading of lanzone to separate seedless fruits using visible light.
- Grading of mango by color using image processing and by taste using NIR reflectance.
- Evaluating the maturity and ripeness of durian using ultrasonic method.
- Detecting maturity, ripeness, and defects of mangoes using ultrasonic.

CROSS-SECTION OF SEEDLESS LANZONE FRUIT AND FRUIT WITH SEEDS
EXPERIMENTAL SET-UP

- Halogen lamp
- Experimental tube
- LDR censor
- A/D Converter
- Personal Computer

Mango sortation system using image processing & NIR
Experimental Set-up for Durian Evaluation Using Ultrasonic

Mangoesteen Evaluation Using Ultrasonic
RECOMMENDATIONS

- R & D cooperations should be established thru APCAEM network.
- Development of certification system for standard export quality & food safety supported by own lab. in each APCAEM member which is recognized by all.
- Available website concerning updated market info & consumer preferences of each APCAEM member.
- Networking of assoc. of fruit growers & exporters.

Thank you
Thank You