INTRODUCTION

Cassava (Manihot esculenta Crantz) in Vietnam has been rapidly changing its role from food crop to industrial one in the beginning of 21st Century. Vietnam is now the second largest exporting country of cassava products after Thailand while animal feed factories also contribute significantly to the increasing demand for cassava root. Vietnam has recently developed an E10 policy requiring the production of 100 to 150 million liters of bio-ethanol from cassava per year (Huong Kim et al. 2007). Vietnam has made the fastest progress in application of new technologies in breeding and new cultivar propagation in Asia (Kanazawa 2001). Such progress has been considered as a result of many factors, of which the success in breeding and application of new technologies were the main contributing factors (Huong Kim et al. 2007).

1. CURRENT SITUATION OF CASSAVA PRODUCTION AND CONSUMPTION IN VIETNAM

1.1. Review of cassava production in Vietnam

Cassava in Vietnam is among the four most important food crops (Table 1). It has always been considered a secondary crop even though it has played an important role in national food security.

Cassava production in Vietnam has mainly been allocated in the Central and Southeast with an increase in planted areas in 2001-2006 (Figure 4). In 2006, area planted to cassava was 475,000 hectares, with total production of 7.71 million tons of fresh root and average yield of 16.25 tons per hectare (FAO, 2008). As compared to the year 2000, the production increased threefold, fresh root yield augmented twofold with increasing rate of 14.7% annually (Figure 5).

New high-yielding cassava varieties (Table 4) and more sustainable production practices have increased the economic effectiveness of cassava production. In year 2006/07 about 350,000 ha of new varieties, mainly KM94, KM140, KM98-5, KM98-1, SM937-26, KM98-7 were grown. This corresponds to about 75% of the total cassava area in whole country.

There has been a great achievement in cassava yield and output. During the 1980s and 1990s cassava production in Vietnam was in decline. But in the past six years, cassava production increased from 1.99 million tonnes in 2000 to 7.71 million tonnes in 2006 (Figure 5). Cassava in Vietnam has rapidly changed its role from a food crop to an industrial crop, with a high rate of growth during the first years of the 21st Century.

1.2 Review of cassava processing and market in Vietnam

There are now 60 cassava starch factories in operation with a total processing capacity of 3.2-4.8 million tons of fresh roots/year. Vietnam has recently developed an E10 policy requiring the production of 100 to 150 million liters of fuel-ethanol from cassava per year. Vietnam is now the second largest exporting country of cassava products while animal feed factories also contribute significantly to the increasing demand for cassava roots.

2. THE SELECTION OF CASSAVA DOUBLED HAPLOID (DH) LINES DERIVED FROM CIAT

2.1. Lessons learned from the Vietnam Cassava Program

Six cassava R&D programs in Vietnam include: Materials, Markets, Management, Methods, Marpower and Money (6 Ms). Main experiences in linking cassava R&D activities in Vietnam include: 1) Establishment of the Vietnam cassava Program (VCNP) including advanced cassava farmers, researchers, extension worker, managers of cassava research and development projects, cassava trade and processing companies, and 2) The establishment of on-farm research and demonstration fields (farmer participation research FPR), and 3) Ten mutual link-up activities (10 T’s in Vietnamese).

2.2. The potential of cassava as a bio-fuel

Using cassava in bio-ethanol production is also a growing interest in Vietnam. Petrovietnam and Brongoaz are investigating the possibility of a 150 million litre plant in central Vietnam. Both plants will draw ethanol from tapioca chips sourced from within Vietnam, according to sources close to the projects. Media reports placed the investment values at around US$80 million to US$100 million for the joint venture between Petrovietnam and Itochu, and US$138 million for the project with Brownco (Energy Current 2008).

LESSONS LEARNED FROM THE VIETNAM CASSAVA PROGRAM AND THE POTENTIAL OF CASSAVA AS A BIO-FUEL

1. New cassava starch processing factories have been built in Hai Duong, Bac Giang, Hai Phong, and Vietnam, while cassava root and fiber factories are now being planned.

2. Cassava starch is considered a high-potential factory.

3. Cassava starch factories have been built in the north and central regions of Vietnam.

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