THE GOLDEN APPLE SNAIL (*Pomacea canaliculata*) SITUATIONS AND INTEGRATED MANAGEMENT ACTIVITIES IN VIET NAM

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Introduction

The Golden apple snail (GAS) (*Pomacea canaliculata* (Lamarck)), is an important pest of rice . Particularly, for the direct-seeded rice in the Mekong delta.

Since 1988 some Vietnamese introduced *Pomacea canaliculata*, easy rearing, fast growth, high protein content and good taste, travelers back from Taiwan and Philippines.

Introduction (cont.)

Two years later, 2 private entrepreneurs to make large rearing snail farming and selling the snail to other countries (one in Ho Chi Minh City and the other one in Kien Giang province).

Until 1993, through FAO office in Vietnam, we were aware of the damage of GAS.

Introduction (cont.)

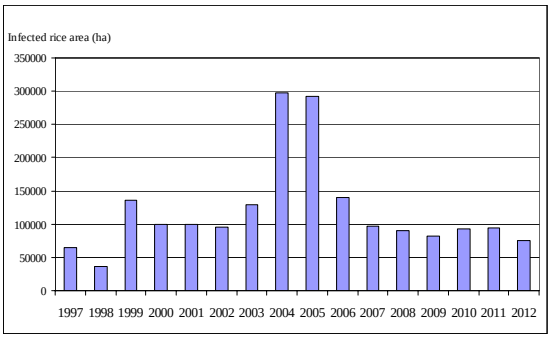
The alarming state of GAS infestation became more vivid through out a workshop on the GAS management was organized in Tien Giang province in South Vietnam.

The PM of Vietnamese Government released Decree No. 528/TTg, date Sep.29, 1994 on GAS prevention, control programs and banned raising and transportation.

Introduction (cont.)

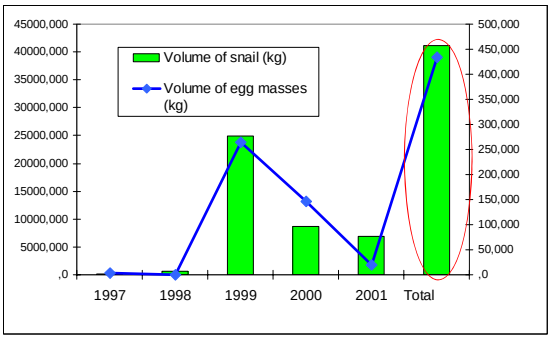
- From Sep., 1994 to Jun., 1995 we assessed the distribution of GAS between rice and non-rice habitats and carried out control in whole country
- GAS appears 100% provinces and total funds for snail control were 2,079 million VND with snails and egg masses destroyed about 689 tons and 102 tons, respectively.

Infected rice area by Golden apple snail in past 16 years in the south of Vietnam

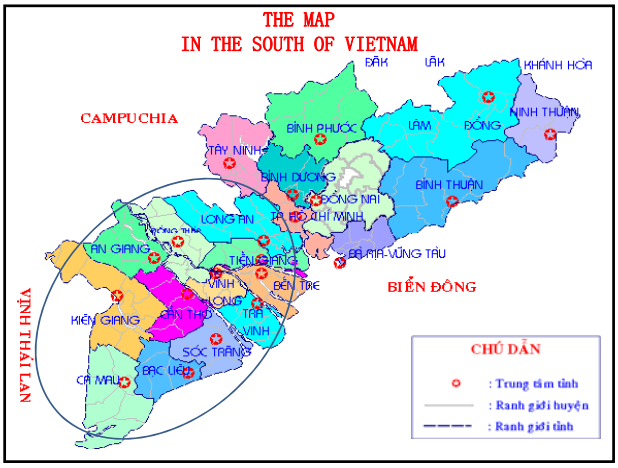


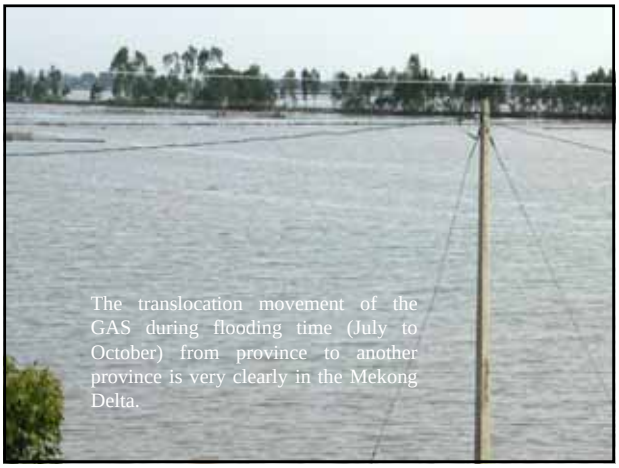
Total **1,921,270.00 ha/16 years** ~ Average **120,079.38 ha/year**

Volume of snails and egg masses were caught in the campaigns in yearly









Symptom and damage







Impacts of GAS infestation

LEVELS	IMPACTS
Agricultural Ecosystem Levels	**120,079.38 ha/year** -100% prov.
Community level	where there is development population GAS is almost no or very few the local snails - abundant natural food and farmers' MD
Species level	Is there any research from GAS as they live and compete food, environment with specie of local snails this? - Local snails reduce
Farm workers & health Hazards	Shells broken cut foot infection for adverse impacts on health of farmers
Environmental Level	Molluscicides kill fish, Aquatic, water source
Economic losses	**tens of billions per year** (Molluscicides)

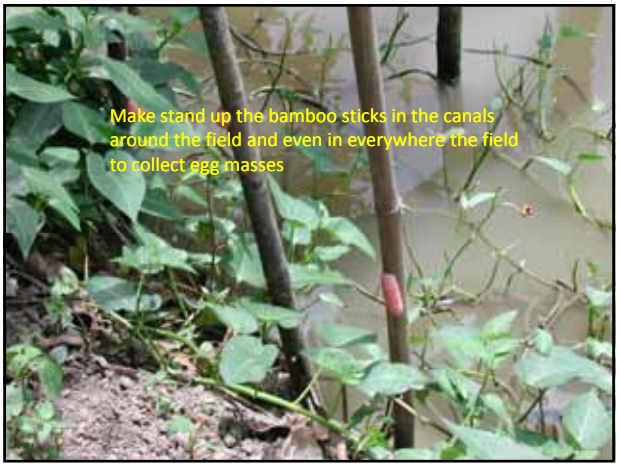
Utilization of GAS



GAS sold in the market

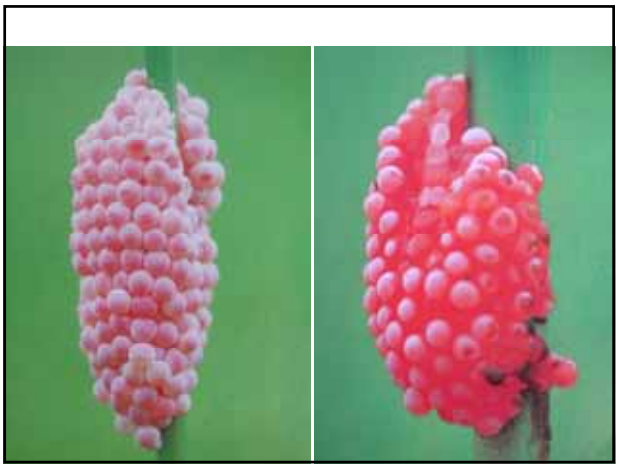
GAS - delicious dishes in the harvesting time







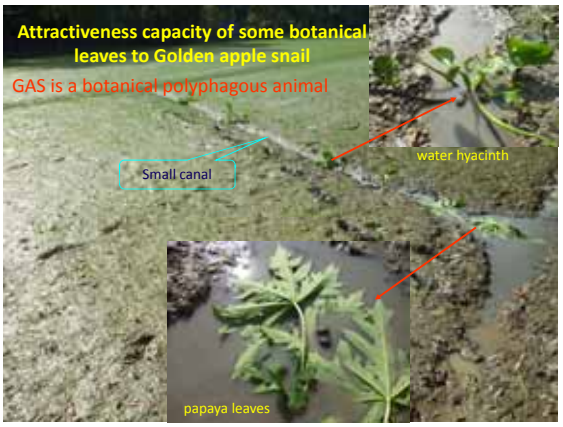






Egg masses of GAS in Rice field







GAS prices in only 500 dong /kg, 1 kg of meat snails 3,000 dong, while the 1 kg feed for shrimp is 18,000 dong. Shrimp show favorite with GAS. The farmers do not worry harmful by GAS



New Paradigms

- New research on GAS: Needed to construct the integrated GAS management demos. on different ecological regions
- Integrated GAS management with social community

cIPM # cTBS

Knowledge Gaps

Distance from research and publishing system is too high and too far from the farmers



KLH

- Generally, funds from Government for basic research or extension on GAS management is done by the technicians of Sub-PPD in provincial levels.
- Farmer training by many methods such as FFS, "talk and chalk", panels, leaflets, T.V., radio. . .
- Leaders of local Government have organized the campaigns of "community snail control" by soldiers, students and farmers to make low population of snail in community water-ways by hand-picking method in yearly.

FARMER TRAINING & IPM

- PP network have been snail control programs for each different region yearly. IPM program on GAS was combined with "c IPM" in different locations. Current activities on the management of the Golden apple snail such as:
- Dissemination of information on snail damage to farmers; through T.V., local radio, extension bulletins, leaflets, FFS.

- Hand picking and destroy egg masses and adults with social community level.
- Recommend to farmers change direct-seeded into transplanting method where high population of GAS and serious damage in rice cropping season.
- Small GAS could be fed by ducks. On the other hand, the big ones could be fed to fish or shrimp after chopping.
- Construction of shallow canals around the rice fields in order to collect snails is easier.

- Pasturing of ducks in rice fields before transplanting to reduce population.
- Stand up the bamboo sticks in the canals around the field and everywhere to collect egg masses.
- Install the screen wires or nets for irrigation water crossing to prevent snail infestation.
- Molluscicide application when necessary

Lessons Learned

- Control GAS with community level – frequently - continuous - on a large scale- Apply many measures to potential in harmony
- Raising fish – Using GAS meat as feed for fish
- Molluscicides killed fish and polluted water (limited)
- Make the bait trap to collect GAS in community water-ways to avoid environmental toxicity
- Collaboration between NGOs and GO, FAO…

Collaboration !



Government Policies & Regulations

- IPM still lacks the collaboration of national and international scientist researchers. In future with an interdisciplinary approach including national & international researchers
- Government policy should support farmers in the GAS management

Conclusions

- GAS was introduced to Vietnam to pet food and export around 1988. Then they get out in nature and developed become serious pest for rice.
- The PM of Vietnamese Government released Decree No. 528/TTg, date September 29, 1994 on Golden apple snail prevention, control programs and it was banned raising and transportation

Conclusions (cont.)

- Hand picking and destroy egg masses and adults with social community.
- Although Molluscicides good control GAS, killed fish and polluted water
- Dissemination of information on snail damage to farmers through T.V., local radio, extension bulletins, leaflets, farmer field schools.
- Collaboration between NGOs and GO, FAO…