

HIA in the Orange Plantations and its Contribution to Healthy Public Policy in the Agricultural Sector in Thailand

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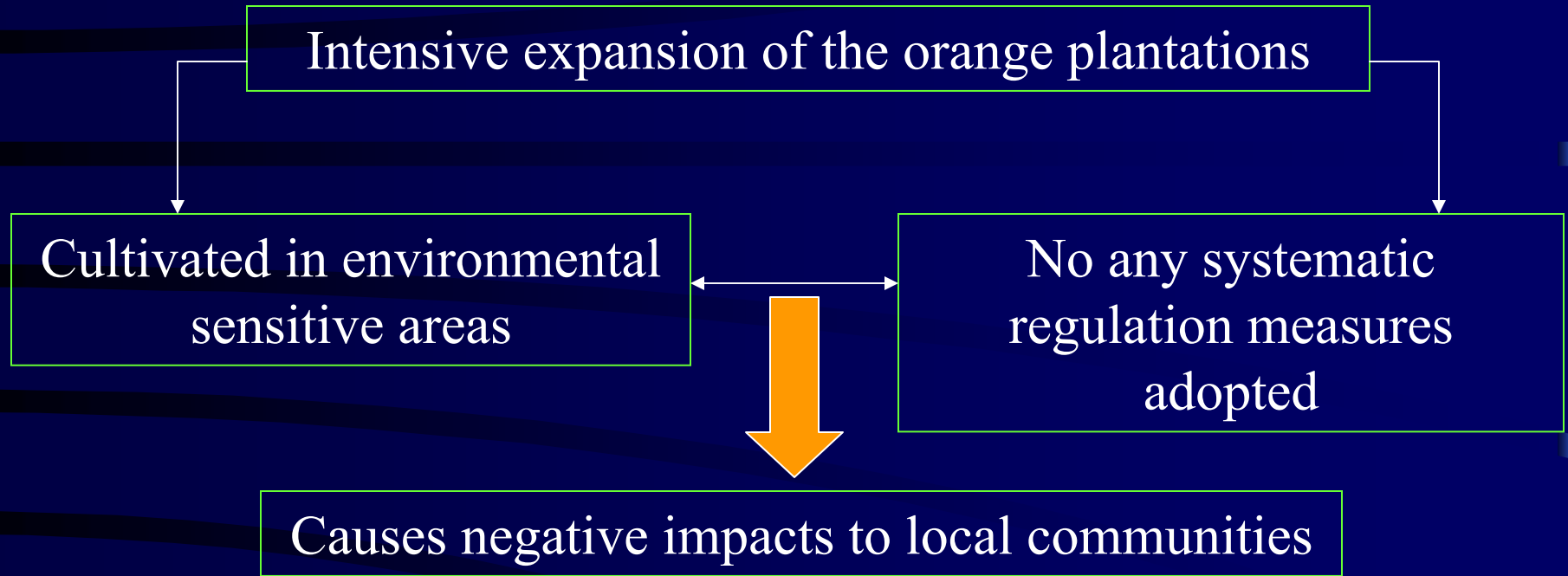
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Introduction to Orange Plantations in the Fang Watershed, Chiang Mai, Thailand

- 1957, orange has been firstly cultivated in the Fang Watershed, the most important natural forest areas in the northern country, by an external investor
- 1982, there had been a successful discovering in a new kind of orange variety called '*Sai Nam Phueng*', more tasty as well as more costly
- Many farmers either small-scale or large-scale shifted to invest in orange orchard, orange cultivating areas were significantly expanded since then, particularly orange plantation areas
- Since 1995 orange has become a new popular commercial fruit crop in the Fang Watershed, as well as it has become a product champion of the province
- More than 16,000 ha of orange plantation areas at present

State of Problems



- Pesticide problems
- Water pollution problems
- Environmental problems
- Social problems



Huge Clearance Areas for Orange Cultivating in the Fang Watershed



The Orange Plantation areas in the Fang Watershed



**The Rapid Expansion of the Orange Plantation areas
in the Fang Watershed**

HIA of the Orange Plantations: A Participatory Learning Process of Local People

Objectives of the Study

- To investigate socio-economic and population changes in the orange plantations
- To explore local people's health problems related to the orange plantations
- To identify the scope of health impacts assessment of the orange plantations

The Study Areas

- Comprises of 12 villages located in the Fang Watershed
- Each village had to occupy orange cultivating areas both in terms of plantations and small-scale crops

Group I: The villages located far from the orange plantation less than 500 metres.

Group II: The villages located far from the orange plantation 500 -3,000 metres

Group III: The villages located far from the orange plantation more than 3,000 metres

The Study Methods

- *Literature reviews* - relevant documents about socio-economic changes & communal state of health problems
- *Local health forums* - organizing forums for discussion and sharing experiences about communities' changes and their health problems
- *Communal health monitoring* - continuously pursue and record status of their health changes for one month
- *Questionnaires* - 3,300 questionnaires were conducted by volunteer local villagers
- *Blood testing* - as a additional service for interested local people
- *A public scoping seminar* - involving key stakeholders to give suggestions and recommendations

The Result of HIA Study

1. The Changes in Bio-Physical Environment

- Chemical Ordor - *terrible chemical odor from heavy pesticide using in the orange plantations*
- Pesticide Contamination in Water Resources - *the residues of pesticide used are washed by rain into local water, negligent dump of pesticide containers near by water sources*
- Water Shortage - *the orange plantations needs high volume of water supply all year round*
- Deforestation - *a vast number of bamboo stakes needed for supporting small orange trees from wind (1 ha = 375 stakes)*



Pesticides are Heavily Sprayed in the Orange Plantations Almost Every Single Day.



Water has been Highly Used in the Orange Plantations All Year Round, As a Result the Amount of Water Supply from Several Local Canals have been Diverted to Serve the Orange Plantations.



Vast Number of Bamboos are Used in the Orange Plantations as Stakes for Supporting Orange Trees.

2. The Changes in Socio-economic Environment

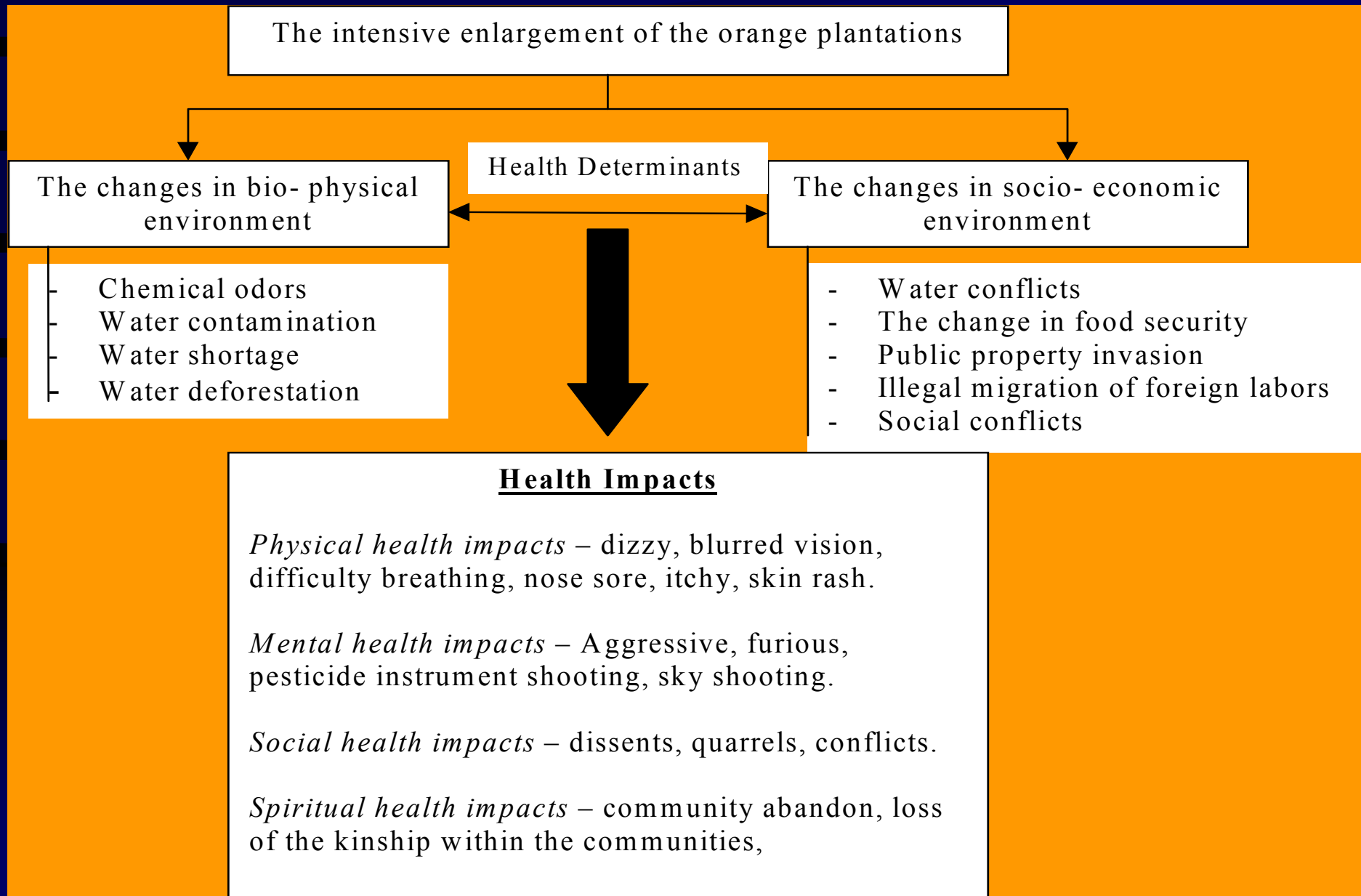
The Conflict over Water Resources Management - *the orange plantation owners violently diverted water from the local canal to use in their plantations, water shortage were more serious*

- **The Change in Food Security** - *the invasion of the orange plantations in community forests, the rapid decreasing of bamboos, the contamination of pesticide on communities' natural food*
- **Public Property Invasion** - *community forest areas, community streets, public space e.g. the deserted temple*
- **Illegal Migration of Foreign Labor** - *mostly work for pesticide spraying (hardly wear any protective gears, have little knowledge about negative impacts of pesticide, do not concern about environmental impacts)*

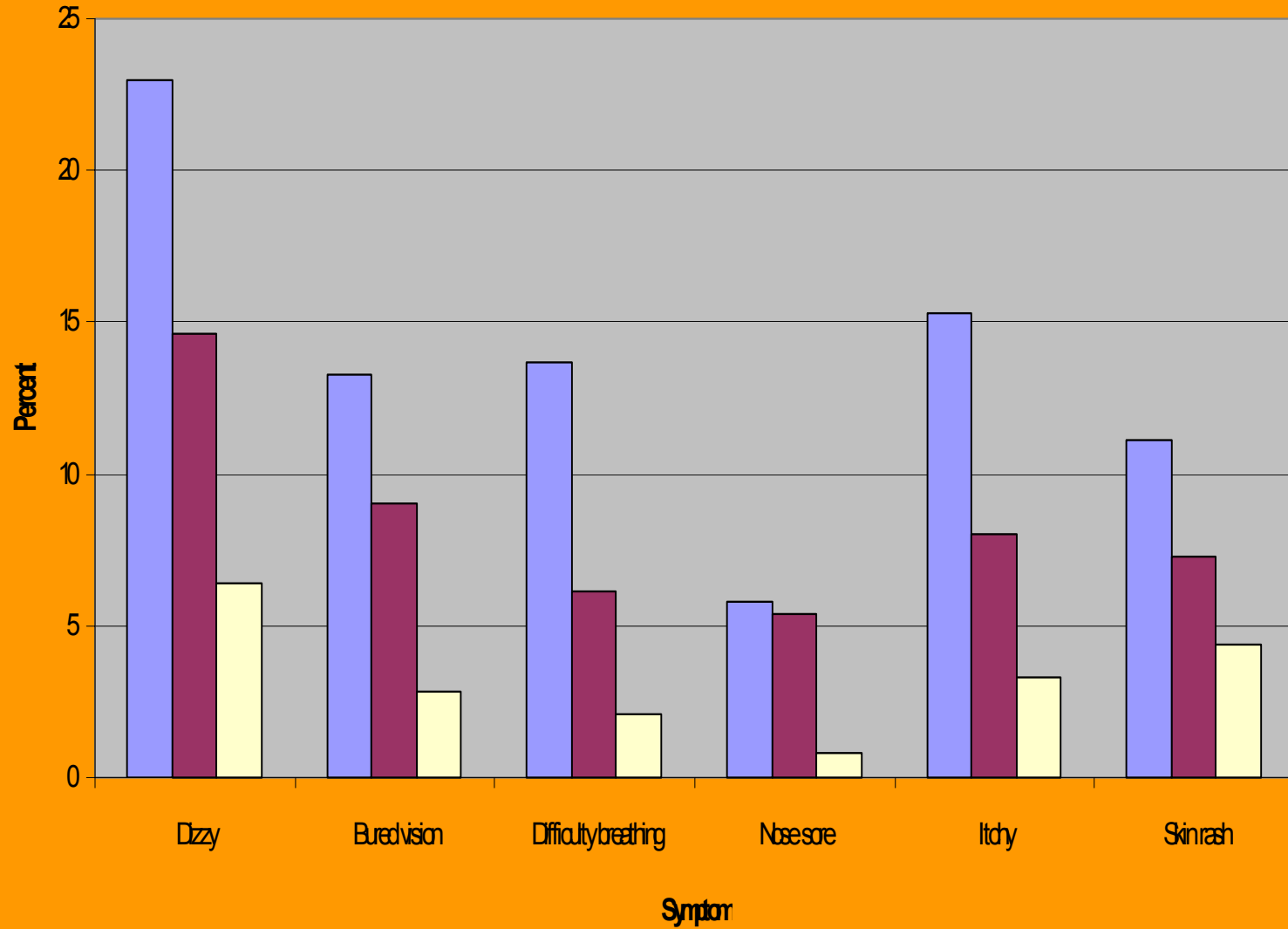
- **The Social Conflicts**

- *local people hopeless and dispirited with their struggle*
- *many people were stress and angry at the plantation owners and do not know how to do*
- *some aggressive behaviors were shown e.g. quarrel, disagree with each others, conflicts among themselves*
- *the decline of social relationship in many community*
- *the collapse of community kinship*

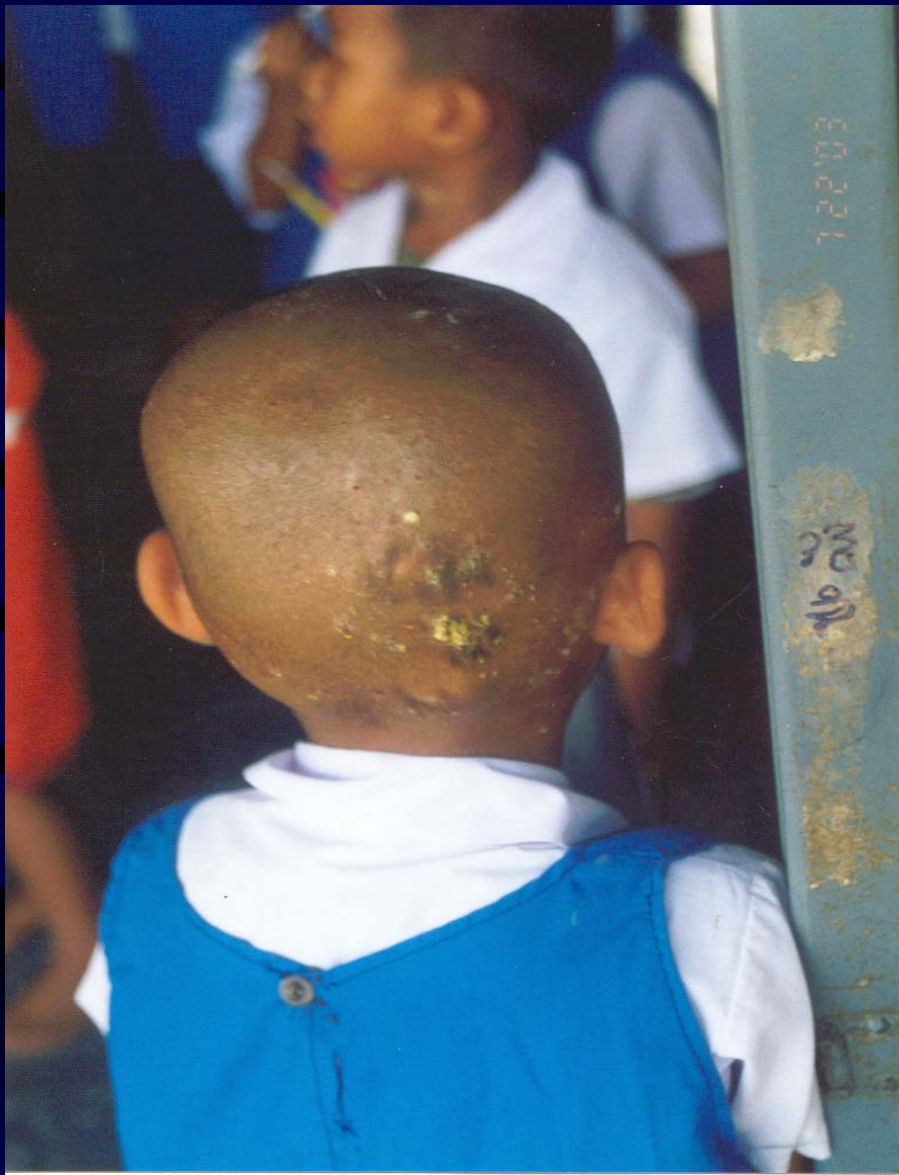
3. The Link to Overall Health Impacts



Physical Health Impacts

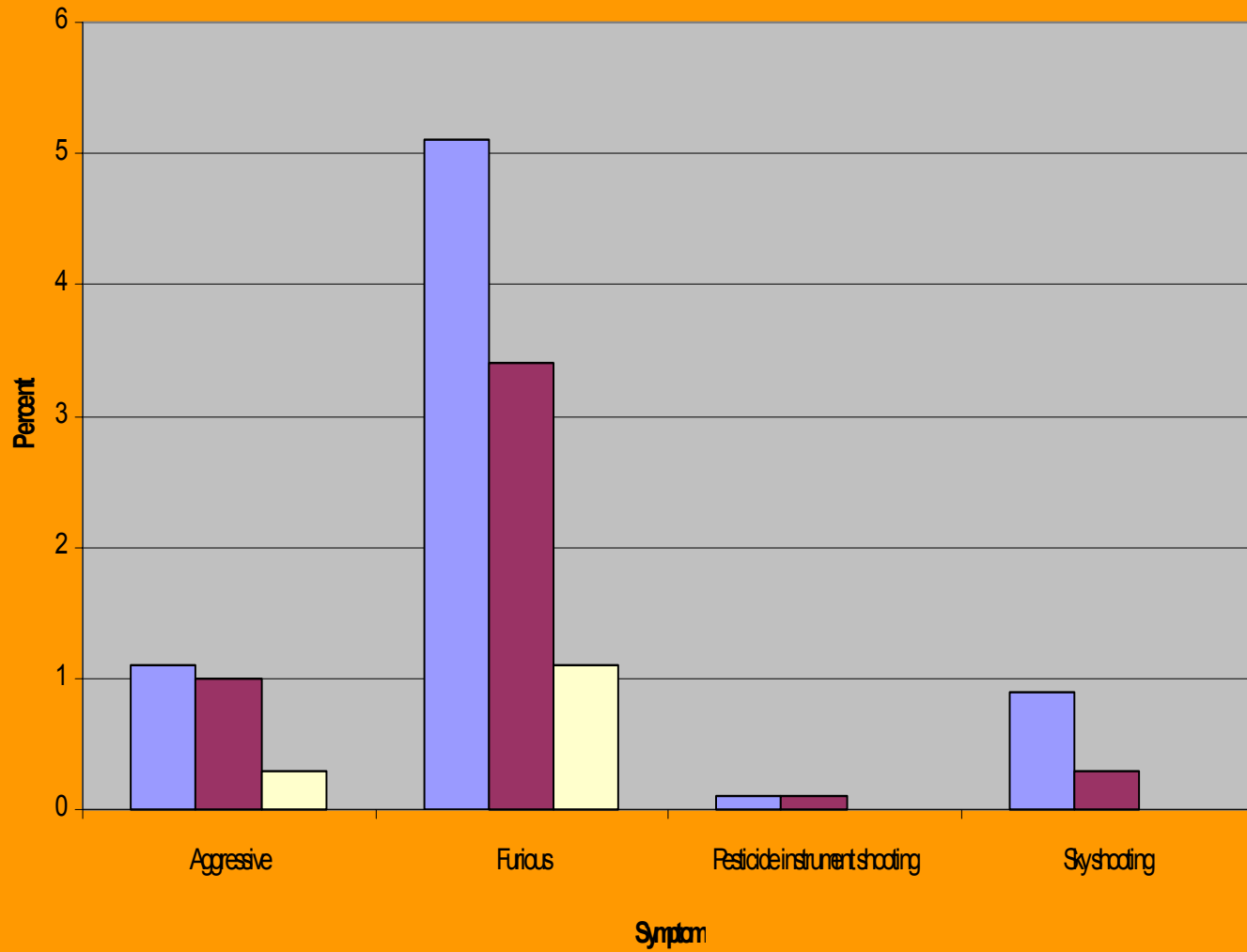


■ Villagers in Group I ■ Villagers in Group II ■ Villagers in Group III



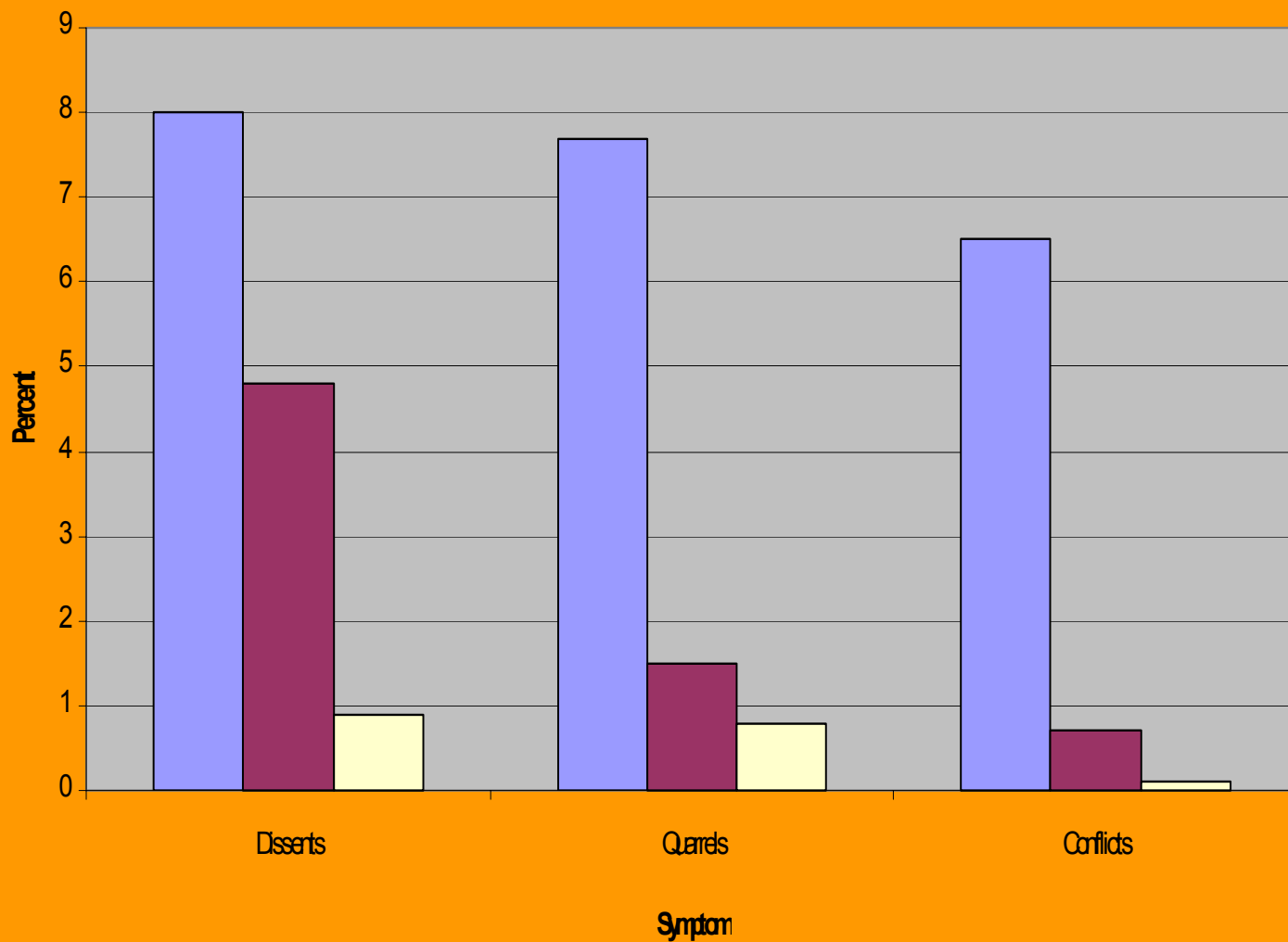
Physical Health Impacts on Local People

Mental Health Impacts



■ Villagers in Group I ■ Villagers in Group II ■ Villagers in Group III

Social Health Impacts



■ Villagers in Group I ■ Villagers in Group II ■ Villagers in Group III

The HIA Study and the Move to Public Policy Process

- The movement of Local People + The result of HIA study

Public communication through Mass
Media

Public debate

Political recognition

Political Process in solving 'Orange Plantation Problems'

The Ministry of Natural Resources and Envir.

6 working groups were set up to solve
the orange plantation problems

Working Areas of the orange plantation solving

- 1) Health impacts
- 2) Environmental impacts
- 3) Illegal land use problems
- 4) Utility of highland or forest reserved areas management
- 5) Illegal foreign labors
- 6) Socio- economic, culture and livelihood impacts

The working process in health impact solving



Local people expected that this solving process could help them to solve their health impact problems

The Outcomes

Arising of adverse social conflict
within local communities

The solving process of orange
plantation problems still cannot
be definitely solved

Influencing of Mass media

- The Minister of Public Health denied to use the Public Health Act, instead proposed to use the Hazardous Substance Act 1992
- The uncertainty of the political process
- The limitation of the working group

Lessons Learnt

1) HIA Methodology and the learning process of local communities

- collective of local people in knowledge building, understanding of 'holistic health', truly participation in designing the study method, data investigation, data collection, data processing, learning about health impact surveillance
- the HIA result was based on non-scientific knowledge

2) Health Concern VS. Economic Concern

- Local people much concerned about their health impacts, after the decline of orange price they turned to be interested in economic issue solely

3) Public Communication

- Bias or vague news caused negative problems to local people (Problems of the orange production process, not problem of the product)
- Needs independent scholars or academics to play balancing roles and communicate with public via different approaches e.g.
 - 1) making academic articles based on sound evidence
 - 2) arrange public forum/public debate
 - 3) organized academic round table

4) Uncertainty of the Political Process

- Necessity for needed resources e.g. human resource, budget,
- Have high power and authority to regulate and control
- Missing of political process support, the public policy process is difficult to success

5) The Contribution of HIA to HPP in the Agricultural Sector in Thailand

- HIA as a collective social learning, the result of the HIA study is not the end answers, instead the learning process of the local community is more important
- Issue of pesticide problem are frequently raised to debate and discuss in the Thai society, the Fang orange case is always mentioned as one example,
 - Health Assemblies (as one of the key mechanism for public policy process for civic groups in Thailand)
 - other green movements e.g. Healthy Agriculture Network
- There is an attempt to push 'plantation business' to be considered in the EIA system reform (plantations should be done EIA)