

Are entrepreneurs made or born???
Emerging systems for aquatic vegetable production in Asia

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Growing aquatic vegetables around the major cities of Southeast Asia show some interesting trends. Many of the production systems appear to meet the growing needs among urban people for fresh and culturally preferred types of food. Prior to the recent large-scale migrations of rural people to the cities, subsistence needs for these foods would have been met locally as they grow with little help in around ricefields. During large parts of the year vegetables literally meant aquatic vegetables and these highly nutritious foods have continued importance in diets today.

Now the physical growth of cities has meant large areas of peri-urban land at various stages of 'development'. Flying into Phnom Penh, Hanoi or any of the other cities¹ we are working in shows the patchwork of urban development-huge areas remain green from vegetation and they are often wet rather than dry. The pace of development also means that land can remain available for growing these types of crops even when the spread of concrete and tarmac is quite advanced. Yields can be high in relatively small areas of land-indeed some species are not produced on 'land' at all but rather on the margins of canals and other waterbodies.



Figure 1: Extensive low input cultivation of water mimosa and morning glory in the Chiang-Rak Canal, Suan Prix Thai Village, Muang District, Pathumthani Province 30 kms from Bangkok.

Little else is required to grow vegetables such as water spinach and water mimosa apart from knowledge of production techniques and preparing the product for market. Abundant nutrients are needed, however, to support the rapid growth of these vegetables-but cities leach nutrients and many producers

¹ The EC funded Papussa project works in 4 SE Asian cities Bangkok, HCMC, Hanoi and Phnom Penh.

take advantage of this fact. Local effluents from residential areas and via formal channels of disposal, typically open sewerage of long gone colonial administrations, are often tapped into by entrepreneurial growers.

The qualities, motivations and dynamics of these vegetable-growing entrepreneurs appears to be a major issue for us to understand how these systems develop and are sustained. Clearly the social aspects of how these systems are organised will vary around the Region but the case study given below identifies one story of a move from rice to aquatic vegetables in one peri-urban context close to Bangkok.

Around Bangkok the more traditional management of aquatic vegetables on waste-water fed canals now coexists with 'modern' production in often extensive areas of former ricefields supplied with agrochemicals. These latter systems supply large wholesale markets that have emerged in the last decades and in addition to supplying Thailand's sprawling capital city, aquatic vegetables are exported throughout the country.



Figure 2 Intensive high chemical input morning glory production in former paddy fields supplying bulk of Bangkoks wholesale markets

The fast pace of overall development, road networks, purchasing power etc have clearly been important prerequisites for this phenomenon but what other factors have been important?

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Figure 3: "Chemical free" aquatic morning glory trial Nonthaburi.

Following initial assessments of communities in which aquatic vegetables were important and monitoring of production and impact at the household level, the research team has worked with one group of growers in Nonthaburi to pilot organic approaches. The trial has given some interesting and sobering insights into the challenges and opportunities for such groups to supply an increasing demand for 'pesticide-safe' produce among Bangkok's middleclass consumers. Working with the group also identified the real power behind this type of development-the key farmer/entrepreneur that often initiates interest in such diversified production other local people and bridges the information and market gaps to those that buy the product.



Figure 4 Entrepreneur and aquatic plants farmer Booncherd Kongdun packing morning glory for the market.

Booncherd Kongdun fulfils this role in this particular community and his story demonstrates that certain personality traits and supportive institutions are critical to development of this kind. The oldest son of a rice growing family he and his sister, as the oldest children, left school to help work in the ricefields and support their younger siblings to access higher education.

This area of Central Thailand is unexceptional. Deeply rural until the last two decades when development edged out of Bangkok proper along the now all pervasive road and power systems, buffalos had been replaced by mechanical traction more than thirty years ago. Transplanted rice was replaced by more labour efficient broadcasting in the early 1980s and combine harvesters appeared more than a decade ago as the urban labour crunch increased the scarcity of labour available. Before the road network arrived rice, the only major crop, made it to market through barges that connected the few markets to rural areas via the network of irrigation/transport canals and rivers of the delta.

In his childhood prior to this time, school was a long walk along paddy bunds. As a school boy the few family shops selling dry goods around seemed like a good idea but it would be a while before such latent ambitions could be fulfilled.

In the late 1980s lotus became a profitable crop in the nearby area where his wife lived and to which he moved and produced on a 2.5 ha plot. Produced for its flowers, seed and roots lotus were planted in adapted rice fields and after a while he also established the crop in part of his father's riceplots. He found that if he could get the crop to market himself the price was good and initially used the public boat service to the nearest market.



Figure 5 Some Aquatic plants are still transported by barge part of the way to wholesale markets

Improving roads and increased daily quantities of lotus to sell meant purchase of a pick-up truck made sense. Before long neighbours producing water spinach (aquatic morning glory) asked him to take their harvest to market and he was making multiple daily trips. A drop in the price for lotus led him to switch his own production to water spinach. His wife had been working in a nearby factory but child-raising duties meant the idea of starting a shop became attractive and so they moved the family base back to Nonproangai Sub-district, Sai Noi District, Nontaburi Province and began first selling petrol and diesel which was now in high demand by local farmers.

The family had accumulated capital through trading a 'new' product, originally lotus, and his wife's salaried employment in nearby industry as well as diversifying further from rice monoculture through aquatic and other vegetables – an area that he had by now a good understanding of production and markets. Rice production still dominates local land use but Kongdun has succeeded in recent years in spearheading a local farmers group that has diversified to produce pesticide-safe vegetables. Having given up transporting/trading vegetables, partly because of the risks of driving, he has taken advantage of early contacts with the Department of Community Development and has had access to a variety of training over the last 5 years. Various Government initiatives have been helpful, especially the Government's 1 million Baht fund that aims to stimulate just this type of entrepreneurial activity, and small inputs to establish a group packing centre. Clearly a success and an example of how the Government aims to promote Good Agricultural Practice (GAP), a casual assessment suggests that Government support has had a relatively limited role-the motivation and activity of the key farmer has had the major transforming impact. His early mobility and exposure to slightly different ideas was clearly important in establishing

experience in dealing with other products and marketing networks. Confidence, an established record in trading and a variety of outside experience made him the natural candidate for further external training from the perspective of both those in the community and outsiders.

The group of 25 active members now has established contracts with a range of different buyers some being intermediaries and some direct sales to supermarkets. He has led the groups' efforts and remains the focal point of contact but feels the challenges of maintaining such group-based efforts are heavy. Initially his outside experience made him a natural leader and educator for many of the other group members but attitudes to business and resource management remain relatively under-developed among many in spite of attempts to introduce them. Rice still dominates agricultural incomes and attempts to plan quantities and timing of vegetable production often undermined by this, rice remaining the priority for labour among different group members. Having this number of group members does mean a variety of different vegetables in demand by the various buyers can be produced on a daily basis but practically it needs a community member that will organise the group on a pragmatic and fair basis. Independent mobility and contacts, developed largely through his personal efforts rather than by any group or institutional action, means less dependence on outside intermediaries. This is a great strength of the group but born out of Kongdun's own experience rather than any specific institutional support.

The nature of the high quality product- vegetables for a specific middle class-aware markets brings its own frustrations to such a group of producers that remain non-specialised and for whom such products remain an avenue to diversification rather than main business. The relatively small volumes of vegetables produced per household means that a focus on achieving and maintaining the needs of Good Agricultural Practice (GAP) or organic standards are often onerous and compete with other labour needs. But the higher margins attained by targeting the current customers would be lost if they entered conventional markets dominated by large-scale specialised producers; instead of a price premium their products would be downgraded as they do not meet appearance standards of vegetables produced using standard agro-inputs.

There are signs that the group is maturing in terms of how it works and reacting to new opportunities. Individuals now prepare and pack their products under the group 'trade name' rather than this being a group activity. Some individuals target the new plethora of local informal markets when they have surplus products once regular customer orders are fulfilled. New opportunities include a recent development for pesticide-free vegetables to be sold outside normal markets-but rather in and around the workplace especially those populated by informed middle-class government officials. A major felt need is for further efforts towards education of consumers to the advantages of organic vegetables that would open up conventional markets and begin to alter consumer perceptions to the appearance of vegetables.

Observing the responses of involvement in piloting organic water spinach production is giving rise to a glimpse of how practical knowledge is developed, used, adapted or rejected by such a producer group and the critical role of the key instigator in the process. Clearly, understanding his background is critical to understanding this learning process in action.