WORKING PAPER 422

XUHUAI AGRICULTURAL DISTRICT : RURAL DEVELOPMENT IN AN INTERMEDIATE AREA

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June 1985

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1. INTRODUCTION

Xuhuai agricultural district lies in the extreme south of the North China plain. The physical and economic characteristics of Xuhuai are synonymous with those of the North China plain and traditionally it has suffered from the high-output-poor trap as well as containing significant pockets of poor, low-output units. It is considered by the People's Daily 29.11.1984 to be intermediate, especially in comparison to the more prosperous rural areas of Southern Jiangsu[1].

Nevertheless, since 1949 Xuhuai has, it is claimed, made exceptional progress by the standards of the North China plain to a position of comparative well-being. The main concern of this paper is to examine the basis for such a claim, to outline how Xuhuai has been able to make such progress, and to assess how possible it might be for Xuhuai to leave the ranks of intermediate areas to join those regions which are considered well-developed.

2. XUHUAI : THE SETTING

Within Jiangsu, She Zhixiang identifies three different natural bioclimatic zones: from north to south these are first, a warm temperate zone of deciduous and broadleaf forest with brown earths; secondly, a northern sub-tropical zone of deciduous and broadleaf mixed forests with yellow-brown earths; and finally, a middle sub-tropical zone of evergreen and broadleaf forest with yellow earths.

Since the early 1960s on the basis of such natural divisions within the province, Jiangsu has been divided into six agricultural regions (see Figure 1). Xuhuai agricultural district, which broadly encompasses the warm temperate zone of deciduous and broadleaf forest with brown earths identified by She Zhixiang is the largest and most important of these agricultural districts in a number of respects:

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[1] For a detailed study on one such rural area in Southern Jiangsu, Taihu agricultural district, see Powell, S.

Agricultural district	Gross area (km^2)	Rural population (millions)	Cultivable land (millions of mu)	Agricultural land availability (mu per person)
Xuhuai	34500	15.00	25.00+	1.70
Lixia river	16700	7.70	11.00	1.43
Yanhai (coastal)	10900	5.30	7.60	1.40
Yanjiang	10700	8.00	8.00	1.00
Zhenyang	14500	5.35	7.25	1.44
Taihu	14800	8.20	10.25	1.25
Jiangsu province	102100	49.55	70.583	1.40

TABLE 1 THE SIX AGRICULTURAL REGIONS OF JIANGSU, 1979

Compiled from materials in Shan Shumu et.al.
pp. 116-122

The physical characteristics of Xuhuai however, while considered favourable in comparison to much of China, are certainly inferior to other agricultural districts of Jiangsu, especially those of Yanjiang, Zhenyang and Taihu. Mean temperatures, for example, differ by as much as 4.5°C across the province (see Figures 2, 3 and 4). Accumulated temperature values show similar variation (see Figure 5). The frost-free period in Xuhuai is considered by She Zhixiang to be between 185 and 200 days. This compares to 230 to 240 days in the south of the province. Such differences in frost-free periods have a significant impact upon cropping systems.

Rainfall becomes more abundant in the south of the province (see Figure 6). Finally, the soils of Southern Jiangsu are considered to be more fertile than those of the north. Shan Shumu et.al. estimate that the organic content of the yellow-brown and yellow earths of Central and Southern Jiangsu can reach 3.7%. In contrast the organic content of the yellow earths which predominate in Xuhuai only reaches 1%.

Variations in production conditions are apparent in detail of the multi-cropping indexes of Jiangsu's various agricultural districts:

TABLE 2 MULTI-CROPPING INDEXES FOR JIANGSU'S AGRICULTURAL DISTRICTS, 1976

Xuhuai	160-180
Lixia river	180-210
Yanhai (coastal)	180-210
Yanjiang	220-240
Zhenyang	220-240
Taihu	265

Compiled from materials in She Zhixiang, p. 110

Used as a proxy for productive capacity, the multi-cropping values shown in Table 2 underline that the northern districts, in particular Xuhuai, are areas of inferior agricultural productivity compared with those of Southern Jiangsu.

Xuhuai does possess abundant water resources (see Figure 7), but the low-lying nature of the land - mostly below 50 metres above sea level - makes it liable to both flooding and waterlogging. Clearly, variations in temperature, rainfall, soil fertility and so forth, will do much to limit Xuhuai's economic potential in comparison to its more prosperous southern neighbours.

The distinction between Xuhuai and areas of Southern Jiangsu is reinforced from observations concerning the economic structure of the rural economies of the various districts:

TABLE 3 GROSS AGRICULTURAL OUTPUT VALUE. THE IMPORTANCE OF THE VARIOUS AGRICULTURAL INPUTS IN THE AGRICULTURAL DISTRICTS OF JIANGSU, 1976. (Percentages of gross agricultural output value)

Agricultural output	Farming	Forestry	Animal husbandry	Sideline production[1]	Fishery
Agricultural district					
Xuhuai	78.6	1.7	12.0	6.6	1.1
Lixia river	75.6	1.1	11.6	9.9	1.8
Yanhai (coastal)	79.4	0.7	13.0	4.1	2.8
Yanjiang	63.9	1.6	14.5	18.9	1.1
Zhenyang	74.9	0.9	14.0	9.5	1.1
Taihu	61.5	0.8	12.9	23.1	1.7
Jiangsu province	70.8	1.1	12.8	13.6	1.7

[1]Sideline production output value includes the output value of team-run enterprises

Materials source : She Zhixiang, p. 113

From Table 3, the relatively small contribution of sideline production to the gross agricultural output value of Xuhuai in comparison to that of other districts is apparent. Capital accumulation from such sideline production remains markedly easier than from farming, and sideline production in Yanjiang and Taihu for example, is of crucial importance in any explanation of their relative wealth.

In human terms Xuhuai, like all of Jiangsu's agricultural districts, is not an administrative unit. Within Xuhuai are the two large urban areas (and their suburban districts) of Xuzhou and Lianyungang. Aside from these two urban centres, the district includes counties from Xuzhou, Huaiyin and Yancheng prefectures (see Figure 8). In all there are 19 counties included in Xuhuai: eight of Xuzhou prefecture - Suining, Feng, Pei, Pi, Xinyi, Donghai, Ganyu and Tongshan; nine from Huaiyin prefecture - Shuyang, Guanyun, Guannan, Huaiyin, Lianshui, Siyang, Sihong, Suqian and Huaian; and two from Yancheng prefecture - Xiangshui and Binhai (see Figure 9).

3. GRAIN PRODUCTION - THE EMERGENCE OF XUHUAI AS A COMMODITY GRAIN PRODUCER

3.1 Past improvements in grain production

"Take the Xuhuai agricultural area as an example. All throughout history, drought, flood and waterlogging, saline soil, low yield and many diasters were regarded as its special characteristics. The surface area of low yield soil occupied above 45% of all cultivable land, the level of fertilizer application was low, and cultivation was extensive."

She Zhixiang p.34

"A big rain brings a big disaster, a small rain a small disaster, and a scarcity of rain no less serious a disaster."

Xinhua 5.10.1974

Until the early-1970s, the characteristics of Xuhuai - as outlined above by She Zhixiang and a Xinhua 5.10.1974 report - allowed at best a cropping system of three crops in two years with priority given to corn, Chinese sorghum, sweet potato, soy bean and wheat crops. Grain yields remained low - typically 200 jin/mu - and the area was forced to rely upon state relief grain.

More recently however, grain production in Xuhuai has experienced profound changes. In 1972 for example, it was reported that the peasants had been organised to "carry out farming and water conservation construction" and had "expanded high-yield and stable-yield farms" and "rapidly transformed the backward features" (Guangming Daily, 1.1.1972). Certainly in the early-1970s important changes in agricultural production conditions and methods were being noted in the Chinese media. Irrigation and drainage improvement was emphasised; mechanisation of agricultural production was encouraged; and improvements in seed strains and so forth were being developed (People's Daily, 18.11.1971; Xinhua, 22.2.1972; People's Daily, 26.2.1973; Xinhua, 5.6.1973).

Numerous local examples of improvements in grain production as a result of changed production conditions and methods are also noted. These include Dafei brigade, Lianshui county (Xinhua, 16.7.1972); Suqian county (Xinhua, 23.3.1972; Xinhua, 23.10.1975); and Dinglou brigade, Pi county (Dinglou brigade party branch). Progress in Dinglou brigade for example, appeared striking:

TABLE 4 DINGLOU BRIGADE, PI COUNTY, AVERAGE PER-UNIT GRAIN YIELDS. VARIOUS YEARS. (Jin/mu).

Pre-1949	100.00
1965	187.50
1969	c500.00
1971	1000.00+
1974	1500.00

Some figures are deduced.

Compiled from materials in Dinglou brigade party branch, p. 95.

On a wider spatial level, while change in the 1970s is not as striking as that claimed for Dinglou brigade, it appears that much progress was made. Total grain production in Xuhuai in 1969 for example, was 6.2 billion jin. By 1979, this had reached 12.9 billion jin (Red Flag, 19.5.1980, p. 38). Most of the gain appears to have taken the form of a most welcome increase in per-unit yields:

TABLE 5 VARIOUS LOCALITIES. AVERAGE PER-UNIT GRAIN YIELDS. VARIOUS YEARS. (Jin/mu).

	Xuhuai	Xuzhou prefecture
1960s	c200	
1976	530	
1982		850

Compiled from materials in She Zhixiang, p. 34; Shan Shumu et.al., p. 117; Liu Xigeng, 0.2

By 1973, according to Shan Shumu et.al., Xuhuai was self-sufficient in grain. Since that time it has developed into a commodity grain base of considerable importance. In addition to these changes in output and yield, there have been marked alterations in crop composition and in production stability.

In the 1970s alone, some 5 million mu of previously dry-field land was brought under irrigation. Much of this derived from large-scale capital projects to harness the Huai River (People's Daily, 26.2.1973; Xinhua, 5.10.1974). This not only caused an upsurge in paddy-rice production - so much so that rice became the most important grain crop in Xuhuai - but also made possible the popularisation of double-cropping in an area which had previously struggled to grow three crops in two years. Furthermore, agricultural capital construction, of which irrigation work was the main component, helped improve production stability. Shan Shumu et.al. (p. 117) claim for example, that in 1979 up to one-third of Xuhuai's cultivable land (c 8.3 million mu) was stable high-yield land. She Zhixiang (p. 106) puts this figure at one-half (12.5 million mu) of Xuhuai's cultivable land. The great discrepancy here might be attributedto a problem of definition as to what exactly stable high-yield land is; alternatively it may involve the question of what is planned as stable high-yield land and what is actually completed.

The contribution of the state to large-scale agricultural capital construction projects within Xuhuai has been considerable. It is claimed in Red Flag 19.5.1980 that between 1950 and 1979

state investment of more than 1.68 billion yuan was given to Xuhuai for irrigation projects alone, of which at least 1.2 billion yuan was spent on harnessing the Huai River (Xinhua, 5.10.1974). This 1.68 billion yuan represented 46.4% of total state investment (3.62 billion yuan) in irrigation throughout the province. Xuhuai receiving state investment in irrigation of 67.2 yuan/mu in comparison with an average of 42.5 yuan/mu for the remainder of Jiangsu.

In addition, it can be reasonably expected that collective investment in irrigation and other forms of agricultural capital construction, the purchase of agricultural machinery and other facilities was at least equal to that made by the state. Indeed, it would seem that away from the major Huai River projects, collective investment in irrigation and so forth became of great significance.

Whatever its source, such investment was rewarded by improved grain yields and output. However, such improvement was not achieved without problems, in particular problems associated with double-cropping - paralleling those difficulties experienced following the popularisation of triple-cropping in Southern Jiangsu (see Powell, S. for a fuller discussion).

The expansion of double-cropping into Northern Jiangsu promoted intense seasonal farming and subsequent increased demands upon labour at key planting and harvesting periods. At the same time, demands for water, fine-quality seed strains, inorganic and organic fertilisers, agricultural chemicals and so forth increased and production costs rose. Shortages of the means of production arose. Often these shortages meant that paddy-rice areas still did not achieve yields of 200 jin/mu. Furthermore, higher production costs were often such that increased production was achieved only at a cost of lower net revenues.

It would appear however, that these difficulties have either been corrected or their impact was not sufficient to deter claims of higher grain output and yields. By the end of the 1970s, grain

production was sufficiently developed to allow She Zhixiang and others to contemplate widespread development and diversification in the production of industrial crops, forest produce, animal products, fish and sideline goods. By the end of the 1970s it would seem that the problem of inadequate basic food and clothing supplies was solved, much of the progress due to large-scale agricultural capital construction - often state-financed. However, in so far as state investment was very much tied to improvements in grain production (either explicitly or implicitly), Xuhuai for the most part had moved only from the low-output-poor to the high-output-poor trap. Demands by grain production on resources of land, labour and capital remained prohibitively high and so discouraged wider development.

3.2 A strategy for the development of Xuhuai's grain production in the current phase

Having briefly outlined the stage of development reached by Xuhuai at the beginning of the current phase, the question remains how Xuhuai might further develop its grain production so as to reduce still further the excessive demands upon land, labour and capital made by grain production. Such a reduction would then free resources to fulfil Xuhuai's wider economic potential. Four points need to be considered: first, the need for further improvement in the quality of land resources so as to facilitate increases in per-unit yields; secondly, a need to increase the level of mechanisation in grain production to reduce both the seasonal shortages of labour and the risks associated with tight planting schedules; thirdly, the desirability of appropriate measures to maintain enthusiasm for grain production - especially in commodity grain bases - given low state prices for quota and above-quota grain; finally, the need to raise the scientific level of grain production.

It can be seen that this list of points is little removed from those development policies espoused during the 1970s and before that in the 1960s (Xuzhou agricultural science research institute). Though much improvement has been noted in Xuhuai's natural resource base since liberation there is still much work to be done. The

average per-unit grain yield of 850 jin/mu for Xuzhou prefecture in 1982 (see Table 5) if taken as a proxy for Xuhuai is probably well below the provincial average[1]. Furthermore, Liu Xigeng points out that the per-unit yield of 5 million mu of grain fields in Xuzhou prefecture for example, remains only 400 jin/mu. He insists that (0.4) "We (in Xuzhou prefecture) must constantly improve our productive conditions" - though without specifying which conditions.

An illustration at a local level of the improvements in grain output and income that can be made by significant improvements in field irrigation and drainage - though also alongside the introduction of production responsibility systems into grain production and so forth - is given by Xiao Lu. The number nine production team, Chenlaozhuang brigade, Gupi commune, Suining county has 51 households and 234 people with a total of 537 mu of cultivable land (2.29 mu of cultivable land per capita). Until recently, this team was backward with fields flooded and waterlogged nine years out of ten. However, between 1978 and 1980 this team constructed irrigation ditches to completely protect its cultivable land from flooding and waterlogging and created 350 mu of paddy fields. Grain production and incomes showed remarkable improvements as can be seen in Table 6.

Clearly in this production team significant results have been achieved, this attributed primarily to important agricultural capital construction projects.

Mechanisation is of great potential importance to grain production in Xuhuai. The availability of agricultural machinery can, according to Wang Liang, increase work efficiency, reduce agricultural costs and improve economic benefits. He illustrates these conclusions with materials from Shihuang brigade, Duqiao commune, Huaian county. In this brigade average expenditure for ploughing and harrowing one mu of cultivable land with an ox was calculated at 12 yuan/mu.

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[1] The Zhongguo Tongji Nianjian, 1982, gives a provincial figure for per-unit grain yields of 596 jin/mu which appears to represent yields per crop. Given the level of multi-cropping in Jiangsu, the provincial average grain yield per mu can be expected to be in excess of 1000 jin/mu.

TABLE 6 NUMBER NINE PRODUCTION TEAM. CHENLAOZHUANG BRIGADE, SUINING COUNTY. GRAIN PRODUCTION CHARACTERISTICS, INCOME. 1977, 1982.

	1977	1982
Grain output (1000 jin)	163.00	640.00
Average per-unit grain yields (jin/mu)	303.53	1191.80
Sales of grain to the state (1000 jin)	7.241[1]	300.00
Grain commodity rate (%)	4.44	46.87
Per capita grain sales to the state (jin per capita)	c31.00	1282.00
Per capita collective distribution (yuan - excluding income from sidelines)	34.00	480.00

[1]Represents an annual average over the period 1949-1977 when total sales to the state amounted to 210000 jin.

Some figures are deduced.

Compiled from materials in Xiao Lu, p. 1.

In contrast, similar work with a 12 hp tractor cost only 1.2 yuan/mu. Additionally, such 12 hp hand-held (walking) tractors can be put to a variety of other uses including threshing, pumping and transportation. However, a closer inspection of Wang Liang's figures is revealing. While the oxen costs are well detailed the costs expended by the 12 hp tractors are not. No mention is given of purchase price or running costs - fuel, lubrication, maintenance and so forth. Thus Wang Liang's conclusions must be taken with some reservations, perhaps representing vested interests (political or otherwise) in increasing the extent of mechanisation.

The utilisation of agricultural machinery in grain production does much to reduce the hazards of tight planting schedules which are associated with double- and triple-cropping. Liu Zheng (a) for example, points out that in Huaiyin prefecture, before the

mechanisation of grain production, summer harvesting and planting commonly took 45 days. After mechanisation this work could be done in only 27 days. Indeed, Liu Zheng (a) gives the example of Miao Cuiying, Sangyuan brigade, Shangtang commune, Sihong county, who, before he purchased a hand-held tractor, found he could not complete all the work to be done in the busy harvesting and planting season. Consequently yields suffered. After purchasing a hand-held tractor, he was able to reap bumper harvests from his responsibility fields. It is to be hoped that other crops shared the same experience.

However, although over 20 million yuan was spent on agricultural machinery within Huaiyin prefecture in 1981 alone, the level of agricultural mechanisation in Xuhuai remains, according to Wang Liang and Liu Zheng (a), relatively low. There is still a real need to increase the scale of agricultural mechanisation in Xuhuai.

Some concern is still expressed about the price-scissors which continues to exist between agricultural and industrial goods and also the price difference between grain and other agricultural produce. As Nong Yan (p. 9) comments: "There is great disparity between the per-mu net income from grain and cash crops". He notes that in Shandong province for example, per-mu net income from wheat production is only 10.17 yuan compared to 68.54 yuan for peanuts and 158.25 yuan for cotton. He continues by claiming that according to a national survey, the net per-mu income from grain production averages only 11.16 yuan. This compares to per-mu incomes of 600 to 1000 yuan from the production of mushrooms, asparagus, tomatoes and so forth in Niuhe brigade, Dunshang commune, Ganyu county - these latter figures are presumably gross but net incomes will be high, perhaps 200 to 300 yuan. (Jiangsu commune - and brigade-run enterprise department). Thus the problem remains of how to maintain enthusiasm for grain production. Despite recent bumper harvests this remains a national priority (Xinhua, 14.3.1985; Xinhua radio, 16.3.1985; Jingji Ribao, 16.3.1985) in spite of state quota and above-quota grain prices which remain low.

The introduction of production responsibility systems, in particular the dabaogan daohu into the countryside is said to have done much to increase peasant enthusiasm for grain production and production in general. Su Linge claims for example, that the introduction of the dabaogan daohu system within agriculture in Suining and Suqian counties in 1981 was an important turning-point in the development of grain production. He illustrates this point with the following figures.

TABLE - SUINING AND SUQIAN COUNTIES. IMPACT OF "DABAOGAN DAOHU" SYSTEM ON GRAIN PRODUCTION. VARIOUS YEARS

	Suining	Suqian
Grain production 1980 (million jin)		700
Supplies of state relief grain 1980 (million jin)	31.06[1]	
Average annual increase in grain production 1981-1983 (million jin)	139.00	100
Average annual commodity grain rate 1981-1983 (%)	20.00	30

[1]This figure represents an annual average over the period 1949 to 1980 when state supplies of relief grain totalled 1.02 billion jin.

Compiled from materials in Su Linge, p. 33.

In the 1970s, grain production in Suqian increased significantly from 280 million jin in 1969 to 680 million jin in 1974. Such an increase is attributed to the extensive agricultural projects in Suqian during that period, some 649500 mu (65.6%) of cultivable land designated as stable high-yield land (Xinhua, 23.3.1972; Xinhua, 23.10.1975). Given this basis, the development shown in Table 7 by Suqian county appears to be quite straightforward - increased incentive for production giving rise to increased output alongside continuing improvement in production techniques (Su Linge). Alternatively Suining, traditionally a backward county, had little of the advantageous production conditions available to producers in Suqian. However, after introducing the dabaogan daohu system, not only was enthusiasm for production aroused but it is claimed that the potential benefits of production under the dabaogan daohu system encouraged peasants within the county to undertake large-scale agricultural capital construction projects, in particular widespread

irrigation of cultivable land (Hu Kangya et.al.). Nothing is said, however, how such projects were financed.

Claims concerning the ability of the dabaogan daohu system to motivate peasants to increase grain production are made by Hua Zhuanbao et.al. for Linshe brigade, Zhangji commune, Xiangshui county and by Fang Zhengfang for Matou commune, Huaiyin county. The evidence presented above would indicate that it is the agricultural resource base which essentially determines grain production. Nevertheless, there is little doubt that the introduction of production responsibility systems within grain production has increased peasant enthusiasm for production, although it is unlikely that in themselves such management systems offer much to specialist grain producers, whether grain producing specialised households or commodity grain bases. For such specialisation in grain production to be practicable, grain producers must receive compensation to offset low state grain prices - a pricing policy which the state is unlikely to change. As Bing Yushu comments (p. 75):

"As a policy we must ensure that peasants who plant grain are able to get profits commensurate, with the profits from planting economic crops, and then we will be able to sustain the peasants' enthusiasm for planting grain."

Such compensation can be in the form of income subsidies, subsidies in the purchase of the means of production and so forth. In practice this compensation is made available to grain specialists by the collective unit and not by the state.

The material for Xuhuai is sketchy on this point. Little is made of the recent upsurge of grain-producing specialised households. Indeed, reference to such specialisation in Tongshan county for example, has little mention of any subsidies, priorities and so forth for specialist grain producers (Zhu Xinzhong). Similarly, while there are numerous reports dealing with the establishment of commodity grain bases in Xuhuai - in Lianshui, Sihong, Shuyang, Donghai, Pi and Tongshan counties - again no mention is made of

compensation to specialist grain producers: Xinhua Ribao, 12.3.1983; Nanjing Radio, 28.3.1983; Ma Jifa et.al; Yu Aixiang et.al. (b)). However, experience of grain specialisation elsewhere in China, including Southern Jiangsu where collective units practice a wide variety of incentives to promote specialised grain production, would suggest that some form of compensation must be in operation. In Xuhuai this compensation is probably in the form of subsidies of the means of production - fertiliser, pesticides, fine-seed strains and so forth - although no detail is to be found in the material. Yet without such compensation, as Bing Yushu notes (p. 78) "enthusiasm for operating commodity grain bases will surely be dampened". The lack of detail concerning compensation to specialist grain producers in the Xuhuai material is probably a genuine reflection of the lack of specialisation within Xuhuai, which is itself determined by the prevailing production conditions. If this is so then production in Xuhuai's commodity grain bases must surely be restricted. Alternatively, in these commodity grain bases the state seems to maintain a greater degree of control than that exhibited in the Chinese countryside in general. Thus the state may prefer to keep subsidies hidden as it is inevitable that it cannot afford to maintain such subsidies at a national level.

This point may be linked to a final important element towards improved grain production in the current phase - the increased use of scientific methods on the land, a point emphasised by Liu Xigeng. The increased use of fine-seed strains, fertiliser, agricultural chemicals and so forth within a framework of rational management can have a significant impact upon per-unit grain yields. Yu Meixian for example, notes that in Tongshan, Ganyu and Huaiyin counties, the popularisation of the application of ammonium carbonate fertiliser has in some instances increased agricultural production by 10 to 20%.

The more recent policy emphasis upon intensification of grain production replaces Maoist policy which promoted - intentionally or otherwise - extensive grain cultivation without necessarily improving per-unit yields. Intensification of grain production

requires both the application of improved agricultural techniques and a trend towards more advanced agricultural production systems. Successfully raising per-unit yields should do much to free important land resources for more profitable agricultural production.

Initially at least, agricultural technicians were reluctant to become involved in the promotion of advanced agricultural techniques within the grain economy. Zhao Shaolong et.al. reporting from Binhai county, noted three fears common to technical personnel: first, the fear of being made responsible for production losses; secondly, the fear that their skills were not up to standard; and thirdly, that the peasants for whom they were working would conceal the true facts about output, yield and so forth. In response the Binhai county authorities implemented detailed responsibility systems amongst agricultural technicians to solve these problems. However, little detail is given and no comment is made of any progress if any.

This experience in Binhai notwithstanding, other counties in Xuhuai report considerable success in attempts to popularise advanced scientific techniques in agriculture. Su Linge for example, using material from Suqian county notes how fine-seed strains are developed by brigade technicians and then supplied to the teams who cultivate seedlings. These seedlings are then distributed to individual households. This sytem has developed rapidly. In 1981, 16500 mu of cultivable land in Suqian was planted with fine-seed strains; by 1984 this figure had reached 350000 mu. Per-unit yields increased by 200 jin/mu on average.

Wu Xuewen et.al. give examples of such improvement at a more local level. They note the case of Wu Zhendong a peasant of Panzhuang brigade, Machang commune, Shuyang county. Wu Zhendong was responsible for introducing advanced agricultural techniques to 200 mu of paddy-rice in the Spring of 1982. The results were impressive enough to encourage the brigade to extend such techniques to the remainder of its responsibility land, certainly it hoped for improvement in grain output:

TABLE 8 PANZHUANG BRIGADE, SHUYANG COUNTY. GRAIN PRODUCTION CHARACTERISTICS. VARIOUS YEARS.

	Before 1982	1982	1983 (expected)
Average per-unit grain yields (jin/mu)	400-500	1185.7	
Total grain output (million jin)	0.32-0.4	1.04	2.06
State grain quota (million jin)		0.56	

Some figures are deduced.

Compiled from materials in Wu Xuewen et.al., p. 2

However, Table 8 raises interesting questions. First, it must be asked if the average per-unit grain yield of 1185.7 jin/mu in 1982 can be maintained. It would be expected that to maintain such a high level of per-unit yield inputs will have to increase and production costs must rise. In Southern Jiangsu many units discovered that production costs often rose at a quicker pace than income from increased output. The same may well be so in Panzhuang brigade. Furthermore, it is difficult to understand why the brigade wants to increase grain output to a projected 1983 level of 2.06 million jin when its state grain quota in 1982 was only 0.56 million jin. The state grain quota might well have increased in 1983 though nothing is said. It seems inevitable that if the peasants are willing - as they seem to be - to expand grain production to such an extent, production must be subsidised. Without such subsidies it is difficult to understand why the peasants have not taken the opportunity to develop other more lucrative crops.

Nevertheless it is reported that the success of Wu Zhendong in Panzhuang brigade encouraged neighbouring communes - Yuelai, Yinping, Huidong amongst others - to utilise his services to improve their own per-unit yields. Though the striking results indicated in Table 8 may not be repeated elsewhere, especially if subsidies have been important in Panzhuang brigade and are not similarly available, some improvement can be expected.

Xu Yiwen et.al. give the example of Gu Zhengqiu, Chenyan brigade, Zhanggou commune, Binhai county. Gu Zhengqiu, observing that many paddy-rice and wheat fields were overgrown with weeds and afflicted by insects, discovered upon enquiry that many individual farmers did not have the appropriate skills to utilise pesticides correctly, and that fees charged for pesticide application were high. In 1982, after purchasing various agricultural chemicals, spray machines and so forth, he signed contracts with 75 individual households to rid 20 mu of wheat fields from weeds and to clear 205 mu of paddy of insects. Upon completion of this work, yields in these 235 mu increased on average by 30%. Similar reports were made by Mao Zongjie et.al. and He Yucai. Some reservations remain however, about this kind of personal adventurism into advanced agricultural methods. For all the examples of success given above, instances of failure must also be found in the Xuhuai countryside. Failure of this kind, seldom reported, can be disastrous both for the individual who has to try to bear the financial losses involved and also for the producer who may lose his crop.

While the adoption of advanced agricultural techniques has obvious benefits, there is still much work to be done. As Liu Xigeng, commenting upon the situation in Xuzhou prefecture, states (0.4): "At present, we lack qualified agricultural scientific and technical personnel", a statement which is also true for Jiangsu and China as a whole (People's Daily, 10.2.1984). The adoption of advanced agricultural techniques, as well as higher levels of mechanisation within agriculture and effective agricultural capital construction, all require an adequate level of skill and experience among the peasants. The detrimental impact of the cultural revolution on education and science and technology remains a stumbling-block to development in the current-phase. The state must urgently seek to improve the levels of skills and encourage the experience which does exist within the Chinese peasantry.

It can be seen that adopting a development strategy which includes more large-scale agricultural capital construction, more agricultural mechanisation, greater incentives for specialist grain

producers, and higher levels of agricultural scientific techniques is likely to lead to increased grain production thereby facilitating all round development in the rural economy. However, to succeed, such a strategy requires considerable financing and the availability of important means of production.

3.3 State finance and commodity grain production - Donghai county

Xuhuai, unlike many areas within China, has been fortunate enough to benefit from considerable state investment in its natural resource base since liberation. However Xuhuai can no longer rely on the state to finance the widespread development in its resources which are still needed. Liu Xigeng makes this point clear, with reference to Xuzhou prefecture, when he comments that "we must depend on ourselves in promoting farmland capital construction".

The only areas where the state will invest for sure are the six commodity grain production bases of Lianshui, Sihong, Shuyang, Donghai, Pi and Tonshan, evidence of the state's continuing commitment to grain production (Xinhua Ribao, 22.3.1983; Nanjing radio, 28.2.1983; Ma Jifa et.al; Yu Aixiang et.al. (b)). A Nanjing radio 28.2.1983 broadcast notes that:

"Construction projects at these bases, to be jointly financed by the state and local authorities, will be focussed on improvement of present irrigation and drainage facilities, breeding of fine crop strains, popularisation of advanced agricultural techniques and other undertakings directly connected with grain production"

Such state-local investment will be carried out under a series of joint state-local investment agreements whereby, between 1985 and 1990, the commodity grain bases "annually deliver 5 jin of grain to the state for each yuan of state investment" in addition to grain delivery quotas (Tian Jijin et.al.).

To circumvent previous difficulties when it is said that state investment did not result in increases in commodity grain supplies, these agreements purport to clarify responsibilities, powers and rights of both parties and, according to Tian Jijin et.al. (K.3):

"... guarantees that special state funds for building projects in connection with the popularisation of agricultural techniques and superior seed strains and for building small farmland water conservancy projects will be earmarked for their specified purposes only".

Donghai county, one of the six commodity grain production bases in Xuhuai, was considered up to 1970 to be a backward county. Donghai is located in the extreme north of Xuhuai (see Figure 9). To the west of the county are undulating, elevated and hilly areas constantly suffering from drought while to the east are low-lying alkaline beaches, the confluence of numerous streams and more often than not under floodwater. Throughout history grain output was both low and unstable. Over 600000 mu of cultivable land in the county was considered to be of very poor quality, yielding less than 100 jin/mu of grain crops (People's Daily, 26.2.1973).

In 1970 the county authorities decided to initiate a series of basic agricultural construction projects within Donghai. They reasoned, as reported in the People's Daily 26.2.1973 (p. 176), that:

"As Donghai was endowed with a relatively large number of streams and an annual precipitation of over 900 mm an intensified effort in bringing mountains and streams under control, seeking a proper linking-up of irrigation projects and turning the evil of water into an advantage could bring substantial results".

This "intensified effort" involved the construction of 250 km of canals; 100 km of drainage ditches; drainage and irrigation stations; the terracing of 70000 mu of fields; the conversion of 400000 mu of previously dry fields to paddy; large-, medium- and small-scale projects involving the moving of over 70 million cubic metres of earth and stone; sinking 4400 wells; increasing the level of agricultural mechanisation by 170000 hp and so forth (People's Daily, 18.11.1971; People's Daily, 26.2.1973). Though no figures are given, grain production in 1971 and 1972 was said to have increased by the "equivalent to the total increase achieved in the preceding two decades" (People's Daily, 26.2.1973).

Certainly by 1973 Donghai county was considered to be a "granary". Throughout the 1970s and especially since the 1978 reforms in agriculture the county continued to make remarkable strides in grain production:

TABLE 9 DONGHAI COUNTY. GRAIN PRODUCTION. VARIOUS YEARS.

	1972	1978	1981	1982
Grain output (billion jin)		c0.645	1.11	[illegible]
Commodity grain sales to the state (billion jin)	0.1			0 [illegible]
Grain commodity rate (%)				38.75

Some figures are deduced.

Compiled from material in Yu Aixiang et.al. (a) p. 2; People's Daily, 26.2.1973, p. 175.

With the aim of furthering grain production and to consolidate itself as a commodity grain base, considerable investment - from both local and state sources - is taking place in Donghai. In the first half of 1983 for example, 2.36 million yuan was spent to establish and popularise advanced agricultural techniques, in particular to popularise the adoption of fine-seed strains in wheat, maize, rice, soya bean and sweet potato production (Yu Aixiang et.al. (a); (b)).

Additionally, while the irrigation and drainage system in Donghai was extensively developed in the 1970s, 5.9 million yuan is needed to complete this sytem. According to Yu Aixiang et.al. (b) in 1983, between 1983 and 1986 a considerable number of small-scale capital construction projects were to be undertaken, such projects aiming to improve over 1 million mu of cultivable land:

TABLE 10 DONGHAI COUNTY. PROJECTED CAPITAL CONSTRUCTION WORK AND THEIR INTENDED IMPACT UPON CULTIVABLE LAND. 1983-1986.

Construction of:	
1. New bridges, culverts, floodgates and so forth	35
2. Small-scale electrically-powered pumping stations	145
3. Small-scale complete irrigation and drainage systems	57
Amount of newly-irrigated area (mu)	280 000
Amount of repaired irrigated area (mu)	330 000
Amount of previously waterlogged land newly-drained (mu)	160 000
Amount of previously drained land repaired (mu)	300 000
Total amount of land improved (mu)	1 070 000

Compiled from materials in Yu Aixiang et.al. (b).

Utilising state and local investment, Donghai should be able to further improve its grain production if the implementation of fine-seed strains is as successful as it has been shown to be in other areas, if the irrigation and drainage system being completed fulfils expectations in terms of the improvement in cultivable land resources, and if the incomes of the peasants involved in grain production are sufficiently high to maintain enthusiasm for production (which must involve some degree of subsidy either of production tools or directly of income).

Three points however, need to be made concerning state investment in Donghai. First, it is the improvement of grain production which is the main concern here. There is little doubt that state investment would not have been forthcoming had Donghai not been a commodity grain base and established as a "granary". Secondly, the element of risk involved in the investment which is taking place in the current-phase within Donghai was minimal given the good productive conditions established in the 1970s. Finally,

the state investment in Donghai was not only specific (for grain production improvements) but also localised. It is to be doubted if any wider spatial impact is made outside of Donghai. (Although the state will no doubt argue that in the long-term, stable supplies of commodity grain from counties such as Donghai, reduces the need for other areas to concentrate so heavily on grain production.)

Elements of the grain production development strategy outlined above are clearly visible in Donghai county. The strategy is obviously workable. However, it is equally clear that away from the few favoured commodity grain bases such a strategy - either in part or as a whole - will not be possible unless local units can accumulate the necessary capital to finance investment in the agricultural resource base, production techniques, and most importantly to subsidise grain production. State finance for such areas will not be forthcoming.

Indeed, unless finance from whatever source is available to subsidise local grain producers, in the short-term Xuhuai may well be able to expand grain production and become an important commodity grain area, but it will remain in the high-output-poor trap. If peasant incomes remain low, eventually enthusiasm for grain production will suffer and the amount of commodity grain supplied to the state by Xuhuai must consequently fall. It is far from clear that Xuhuai will be able to solve this problem.

4. SOURCES OF LOCAL ACCUMULATION FUNDS

4.1 Rural industry

The Xuhuai authorities do not have to look far to find a model of rural industrial development serving as the source of accumulation funds to support agriculture. Taihu agricultural district Southern Jiangsu, is a perfect example of such a phenomenon (for a further discussion see Powell, S.) In particular Wuxi county is noted as a "showpiece of rural industrialisation" (Leeming). Certainly in Wuxi considerable development in agriculture was funded from accumulation funds almost entirely made up of industrial profits

(Hua Huiyi). Additionally, rural industry is an important source of employment for rural surplus labour - a problem exacerbated by the introduction of production responsibility systems within agriculture.

It is possible to see from Table 3 that in 1976 at least, and there is little to suggest that this situation had changed before 1978, the contribution of small-scale (team-run) industrial enterprises to the gross agricultural output value of Xuhuai was small. Inevitably any development financed by the accumulation of investment capital from the profits of such industrial enterprises would be limited and localised. Much of Xuhuai would be unaffected.

However, there is some indication in the materials that rural industrial enterprises within Xuhuai have shown some degree of development in the current phase, Li Yang attributing this development - in Suqian at least - to the introduction of production responsibility systems within rural industrial undertakings.

In Ganyu county for example, there has been a sharp rise in commune- and brigade-run enterprises in recent years:

TABLE 11 GANYU COUNTY. COMMUNE- AND BRIGADE-RUN ENTERPRISES. 1976. 1980.

	1976	1980
Number of commune- and brigade-run industrial enterprises	34	1962
Output value (million yuan)	7.61	73
Profits (million yuan)		14.6

Compiled from materials in: Jiangsu commune- and brigade-run enterprise department (p. 69)

It should be noted that Ganyu is much advantaged by location. Furthermore, Table 11 does hide a distinct change in thinking towards commune- and brigade-run industrial enterprises in Ganyu. Initially the county authorities invested several tens of thousands of yuan to establish large factories - including a rock crystal factory, a welding electrodes factory and a chemical plant - in the belief that large factories would produce large returns. However, more often than not, techniques in these factories were not up to standard, quality was low and products were over-priced (Jiangsu commune- and brigade-run enterprise department). Recognising these shortcomings, the county authorities changed the orientation of their policy, taking Wuxi as their model (so they argued); and more numerous and smaller-scale industrial enterprises were started. These smaller enterprises were able to benefit, so it was claimed, from low levels of investment, quick returns and good economic benefits. Indeed in 1980, the average return to capital in Ganyu's commune- and brigade-run industrial enterprises was 21.3%. This compares with a provincial average of 16.38% (Jiangsu commune- and brigade-run enterprise department, p. 70).

Three broad areas of rural industrial activity can be identified as dominant in Xuhuai: the extraction industry; the construction industry; and the agricultural produce processing industry. Small-scale coal mining is well-established in Xuhuai and has played an important role in local economies for a number of years (Xinhua, 11.12.1972). Liu Xigeng notes that there are a variety of mines run by communes and production brigades. He states that in Xuzhou prefecture for example, there are 28 coal mines run by communes and brigades annually producing 7 million tons of coal, which might reasonably be expected to raise 20 million yuan for collective investment funds. Locally-mined coal not only provides fuel for domestic and industrial use, it is claimed that it also stimulates the expansion of small-scale plants producing chemical fertiliser, coke, iron and steel, farm machinery and bricks (Xinhua, 11.12.1972). In Ganyu county, while there

appear to be little or no coal reserves, other materials - stone, sand, limestone and so forth - are all extracted locally, providing the basic raw materials for the construction industry (Jiangsu commune- and brigade-run enterprise department).

The development of the construction industry is also important. In Ganyu for example, this development reflects the fact that basic foodstuff[illegible]clothing requirements seem to be assured and some level of [illegible]rity is being reached. According to the Jiangsu commune- and brigade-run enterprise department amongst others, there has certainly been a change in peasant priorities from "first food, second clothing, third other household expenditure and fourth home improvements" to "first home improvements, second clothing, third other household expenditures and fourth food". In the current phase it would seem that an increasing number of peasants, dissatisfied with their old, cramped, poor-quality, grass-covered houses, are becoming more able to finance the construction of new, spacious, better-quality houses.

In Ganyu between 1978 and 1982, it is claimed that 195000 new rooms have been built by the construction industry, almost one new room for every four people in Ganyu. Undoubtedly the extent of building should mean that collective units in Ganyu at least, are able to accumulate some amount of capital accumulation funds from the profits of construction undertakings. Furthermore, two other points are of interest. First, and most significantly, peasant investment in housing is almost certain to take up a significant part of any available personal finances thereby restricting the amount that individuals can spend on capital construction in personal responsibility fields, increased use of fine-seed strains and so forth. Given the past instability of rural policy this attitude is easy to understand.

Secondly, in some areas there is concern over the illegal accumulation and indiscriminate seizure of previously cultivated land in order to construct new houses. Shi Qingmin et.al. for example report the case of a cadre in Daizhuang commune,

Pi county, who illegally built on land of the number three production team, Zhenxi brigade. Given the amount of new building claimed in Ganyu - which may or may not be a true reflection of Xuhuai as a whole - this problem could be quite significant.

The development of the agricultural produce processing industry in Xuhuai is potentially of great significance. In Ganyu county for example, since 1978 30 small enterprises, including wine refineries, noodle and starch processing factories have been established. Such enterprises not only helped satisfy local demand for wine, dried starch and noodles, but they also generated sales in Zhejiang, Anhui, Shandong, Henan and Hebei. Zhudu commune in Ganyu, for example, established a wine and noodle processing workshop. Output was of a high quality and costs were low. Output value in 1980 was 470000 yuan with net profits of 80000 yuan (Jiangsu commune- and brigade-run enterprise department). Furthermore, the by-products of many of the agricultural produce processing undertakings can serve as fodder for pigs and facilitate extensive pig-breeding.

Xiaogoutou brigade, Chengtou commune, Ganyu county for example developed pig-breeding upon the basis of utilising by-products for fodder. In this way, in 1980 at least, it was able to become the largest pig-breeding brigade in the county:

TABLE 12 XIAOGOUTOU BRIGADE. GANYU COUNTY. PIG ENTERPRISES. 1980.

Total number of pigs	2 180
Pigs per household	11.3
Pigs per capita	2.5
Pigssupplied to the state	581
Net income from pig production (yuan)	116 000
Net per capita income from pig production (yuan/capita)	133

Compiled from materials in Jiangsu commune- and brigade-run enterprise department, p. 72.

Similarly, in Hsian county the milling industry has been developed to facilitate the expansion of animal husbandry. As a result of this development in milling, a People's Daily 29.11.1984 report claims that livestock fodder costs have been reduced thereby encouraging a rapid expansion in animal husbandry. The milling industry can thus increase the value of grain production and provide incomes higher than would be expected if grain was simply sold to the state at above-quota prices.

Thus some development of the rural industrial undertakings within Xuhuai has taken place in the current-phase. Nevertheless reservations remain. First, the scale of Xuhuai's rural industry in numerical terms, volume of accumulation funds generated and so forth - is limited. Certainly in comparison to that exhibited by the more illustrious units of Southern Jiangsu, Xuhuai's rural industry - and the agricultural developments such industry can promote - remains very much second-best. Secondly, the materials available on rural industrial enterprises in Xuhuai are very much drawn from certain localities, in particular Ganyu county in the east of Xuhuai bordering Lianyungang (see Figure 9). This may be an indication that Xuhuai's rural industrial development remains, as yet, highly localised and thus can be expected at best to generate accumulation funds only for localised agricultural development and implies continuing polarisation of prosperity.

4.2 The diversified economy

It is claimed by Chao Hai et.al. amongst others, that Xuhuai has a significant diversified resource base. Animal husbandry is well established; forestry reserves are substantial, accounting for one-quarter of the provincial reserve; the coastal counties have ample potential for developing the fishing industry, Lianyungang being the major fish-port of Jiangsu; and a wide variety of cash crops can be cultivated - fruit, cotton, tobacco, oil-bearing crops and so forth (Shan Shumu et.al.).

In the years immediately prior to 1978 the exploitation of these diversified resources was limited by a variety of influences including the Maoist emphasis upon grain alongside the view that diversification was a "tail of capitalism" and therefore something to curtail; the paucity and inefficiency of commercial channels; the restrictions upon private plots and so forth. Nevertheless, some units were able to significantly develop the diversified economy and raise collective accumulation funds in this way. Dinglou brigade, Pi county was one such unit. In 1975, its developed diversified economy was reported as having made a significant contribution to collective accumulation funds which reached 500000 yuan. With these funds 99 tractors and other farm machinery were purchased. Ploughing, threshing, transportation and processing of agricultural produce were wholly or partially mechanised. Such mechanisation contributed both to the progress made by Dinglou's grain production as illustrated in Table 4 and also the all-round development of the brigade's rural economy (Dinglou brigade party branch, p. 99). In Dinglou brigade at least, the diversified economy had an important role to play in rural economic development. Certainly the Xuhuai authorities can look to the experience of Dinglou brigade as a model for rural economic development in the current-phase.

The Jiangsu commune- and brigade-run enterprise department outlines in detail the potentially rich diversified resource base - encompassing all aspects of the diversified economy - available in Ganyu county. In the uplands to the extreme north-west of Ganyu - though for the most part little more than 200 metres above sea level - local units have developed apple orchards, chestnut plants, hawthorn bushes and tea-gardens. On the plainland which predominates in Ganyu, significant diversified undertakings are found:

TABLE 13 GANYU COUNTY. "THE PLAINS". THE DIVERSIFIED RESOURCE BASE. 1981.

Areas sown with cash crops (mu):	
Mushrooms	175
Beans and tomatoes	1 200
Asparagus	3 000
Peppermint	11 000
Mulberry	4 200
Head of livestock:	
Rabbits	500 000
Sheep/Goats	33 000
Pigs	470 000
Area given to the development of aquatic produce (mu):	
Fish-breeding	40 000
Shellfish	200 000

Compiled from materials in Jiangsu commune- and brigade-run enterprise department, p. 70.

Numerous instances are given by the Jiangsu commune- and brigade-run enterprise department to illustrate that these resources are being successfully explored in Ganyu - increasingly it is claimed, through the utilisation of specialised households and other specialised management forms. These resources not only provide an important source of rural income and employment opportunities, they can also provide raw materials for local industrial undertakings.

It can be seen however, from Table 13 and from comments concerning diversification in the uplands of Ganyu, that an obvious distinction can be made between diversification in the uplands and that of the lowlands. The undertakings shown in Table 13 for the lowlands indicate high density populations, the availability of local markets (perhaps including Lianyungang) and surely an unusual degree of sophistication. The reverse is

true for undertakings in the uplands. Income differences from such undertakings will also be found, with much more opportunity for high incomes in the lowlands.

Examples of successful development in diversified undertakings are found throughout Xuhuai, although probably not to the same extent as that illustrated in Ganyu which is in quite a favoured location. Zhao Yuangang for instance, comments upon the development of forestry work in Pi county which has been facilitated by the establishment of tree-seedling nurseries. Again, such forestry development is noted by Xiao Yinfu in Zhuzhou commune, Suqian county.

In Pei county, Zhang Shijun et.al. give examples of developments in cattle-breeding in both Qishan and Cuizhai communes. Indeed, in Cuizhai commune, Zhang Shijun et.al. note that specialisation in many kinds of diversified undertakings has occurred at a very rapid rate in recent years. In 1982 for example, over 1600 households in Cuizhai commune (c 25%[1]) received incomes of 2000 yuan or more per household from diversified undertakings, amongst which, 17 received incomes of over 5000 yuan.

Again, Pan Meizhong et.al. note the successful development of fish-breeding in Yuanji Xiang Huaiyin county. Yuanji possesses 800 mu of fish ponds and 1250 mu of rivers upon which fish-breeding is being developed. In this example, successful exploitation of resources has been achieved under the "umbrella" of an aquatic produce company. This company has installed drainage equipment, prevented flooding in the area and developed facilities to breed fish-fry and improve survival rates. The company provides individual households with nets, fishing boats and so forth. In return, under the aegis of a contract, the peasants must hand over 10 jin of fish annually for every mu of water area

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[1] No percentage is given by Zhang Shijun et.al. However from details concerning the organisation of communes in 1982 (Leeming and Powell, Table 2.4) a "rough and ready" estimate of 6700 households per commune can be deduced for Jiangsu as a whole.

contracted: 3 jin representing payment for "management fees" with the other 7 jin contributing towards equipment purchase, installation, repair and management.

Presumably if effectively and rationally exploited, the diversified resource base within Xuhuai could develop into a major source of capital investment funds, funds which would be used to further free Xuhuai from the traditional limitations of grain production. Indeed, if grain production is sufficiently developed, diversified undertakings themselves should be increased.

In Xuhuai however, the difficulty remains of how to take advantage of the diversified resources which are available. The development of diversified undertakings requires initial investment capital, capital which is also needed to develop the agricultural resource base and so forth in order to further grain production. A conflict for capital resources is evident. Indeed, no doubt this conflict is exacerbated by the needs of rural industry for investment funds. In Xuhuai, however, this conflict is best illustrated in the materials concerning agricultural diversification.

From the materials it seems possible to distinguish three different types of rural diversified economies within Xuhuai: first, those areas which historically have been able to fulfil grain quotas with some ease and where the diversified economy is well-developed. Investment funds are more readily available. This would be expected in those areas peripheral to Xuzhou and Lianyungang, for instance the lowlands of Ganyu. Secondly, those areas where up to the present attention has been focussed almost entirely upon grain production thereby restricting the investment funds made available to the diversified economy and limiting the extent of diversification and all-round development. Much of Xuhuai would fall into this category. Thirdly, those peripheral and backward areas where the agricultural resource base remains weak, grain production problemmatical and investment funds - if any - continue to concentrate upon improvements in grain production. Such areas remaining within the low-output-poor trap.

It would be reasonable to argue that the bulk of rural units in Xuhuai fall into the second category outlined above. In these units grain production has improved but incomes remain low. The way out of the high-output-poor trap for such units rests with their ability to use the limited financial resources available to them to sufficiently develop diversified undertakings in order to generate accumulation funds. Such funds would then be used to reduce demands made by grain production upon land, labour and capital resources freeing them for further diversified or rural industrial development.

Xie Chengjin et.al. give the example of Gangxi brigade, Gangshang commune, Pi county. This brigade, after years of relying upon the state for relief grain, had been able to improve grain production. Incomes, however, remained low. The brigade had, it was reported, been able to accumulate 10000 yuan - although no details were given as to how this was achieved. With this money, the brigade developed such diversified undertakings as poultry-breeding, cattle-breeding and so forth. The investment, according to Xie Chengjin et.al., had been successful.

Alternatively, Feng Zhengfang et.al. give the example of Xu Xiaotan, a peasant of Matou commune, Huaiyin county. In 1981 Xu Xiaotan took out a bank loan of 310 yuan to develop goose-breeding. By the end of 1982 he had successfully repaid the loan and had an income of 2655 yuan (though it is not made clear if this was gross or net). With this money he was reported to be further diversifying his undertakings to include pig-breeding.

In both of these examples from Pi and Huaiyin counties, local units or an individual producer had successfully developed diversified undertakings and most importantly had gone on to consolidate their gains. However, it must be said that the materials through concentration on such small-scale individual examples in effect is symptomatic of a lack of anything better to report. Furthermore, some comment must be made about the

consequences of failure - something rarely reported in the media. Failure in Gangxi brigade or by Xu Xiaotan must surely have given way to a situation where future development of diversified undertakings would not only be hindered by a lack of available collective investment funds in Gangxi, or bank credit in the case of Xu Xiaotan, but also the consequences of rural indebtness.

It is by no means certain that diversified undertakings in Xuhuai can be sufficiently developed to facilitate wider rural economic development. Some units may break free of the high-output-poor trap whilst others - the majority - will remain in it.

5. COMMERCE

The efficiency of the commercial system in Xuhuai is important because it can shape the extent of the development of rural industrial enterprises and diversified undertakings. Additionally, the grain production development strategy as outlined earlier is rendered impractical unless rural demand for the means of production is effectively met. Not only that, rural demand also needs stimulation. Two aspects of the commercial system need to be considered: commercial organisation and the commercial infrastructure.

There is little doubt that up to 1978 official commercial channels and activity in Xuhuai - as in most areas of China - were very much hindered by leftist influences. Indeed, Lu Hongyi et al. note that as late as 1982, leftist influences continued to slow commercial activity in Xinyi county. A similar picture emerges from a Xinhua Ribao 4.2.1983 report for Feng county.

In addition, the actual number of retail outlets and purchasing stations remained small. Before 1981, in Lianshui county for example, the purchase of meat by commune headquarters

(townships) from smaller "relatively distant" units was said to be "very inconvenient" - which no doubt means was rarely possible - because no retail outlets were to be found in the smaller production units (Liu Zheng et.al.).

More recently it is argued that commercial channels are once more opening up and are becoming increasingly efficient. A Xinhua Ribao 26.10.1983 report for example, notes that in Xuzhou prefecture much progress has been made in commerce through a variety of measures: an increased number of retail and purchasing outlets and personnel; improved business skills and greater vocational training; improved purchasing methods; and improved distribution of goods to the countryside. However, no figures are given, suggesting that these improvements have been limited in extent.

In Lianshui, the development of purchasing and marketing stations throughout the county - at various levels - was, it is claimed by Liu Zheng et.al., doing much to alleviate previous problems in buying and selling when official commercial channels were considered inaccessible. In all 400 of these stations were said to exist in rural Lianshui in 1983 and their work was said to be excellent. (This may represent approximately 13 stations per commune or a station in about 70% of all production brigades in the county[1].)

The emergence of individual commerce is also of potential importance in surmounting the blocks in the official commercial system which continue to exist. In Feng county for example, in 1982 and 1983, 2470 individual households established 1772 individually-managed retail outlets throughout the county. One such individually-managed retail outlet in Wangfuzhuang Village for example, was reported to have recorded sales of over one million yuan in 1982 alone (Xinhua Ribao, 4.2.1983).

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[1] No figures as to distribution are available in the materials and once more "rough and ready" figures have been deduced.

However, two points emerge in the material from Feng county. First, these individually-managed retail outlets remain very much a complement to state- and collectively-run commerce and in this sense the effectiveness of official commercial channels in handling the increasing burdens being placed upon it remain of crucial importance. Secondly, the goods sold in the individually-managed retail outlets appear to be very much consumer goods - tobacco, wine, sugar, salt and so forth - raising doubts about their ability to supply producer goods of any kind. However, as Wangfuzhuang Village illustrates, a large rural demand for consumer goods is evident, in part perhaps resulting from the inability of rural producers to purchase producer goods and reinforcing the argument that many peasants are more concerned with taking advantage of increased incomes for short-term consumption gains rather than investing in their responsibility fields to reap longer-term gains.

Meanwhile, it would appear that the official commercial channels are still unable to guarantee supplies of important producer goods. Liu Xigeng and Li Yang et.al. separately note that supplies of synthetic fertiliser, diesel fuel, electricity and so forth remain inadequate. Similarly, Wang Liang and Liu Zheng (a) separately note that supplies of small-scale walking tractors fell far short of actual demand, a fault not only of commercial inefficiency but also of inadequate output.

Furthermore, although it has been claimed that commercial work is now of a higher quality, corruption within the commercial system remains a major problem. In Xiangshui county for example, there were instances of over-charging for certain foodstuffs (Li Chengshu et.al.) and reports of large-scale smuggling of salt (Yang Anlin).

To arrive at firm conclusions as to the actual effectiveness of state commercial organisations in Xuhuai remains difficult. The situation has undoubtedly improved since 1978 even though

leftist influences continued to hinder commercial change in some areas until quite recently. No doubt in some localities these influences are still felt. Thus, it would be reasonable to accept that some progress is being made in commerce, but this progress remains patchy and uneven further limiting potential development in the rural economy. Most damaging has been the widespread concern expressed over the availability of producer goods in rural Xuhuai. Until this situation improves, momentum for rural economic development cannot be generated.

Much less can be said about the commercial infrastructure. It remains a distinct advantage to have ready access to important markets. Wang Shouchang et.al. for example, comments that the excellent progress reported from Shahe commune, Ganyu county owes much to the proximity of the county towns of Donghai and Ganyu as well as Lianyungang, with transport links to each being very convenient. Indeed, they point out that "the ease of communications makes it easy to develop processing and service industries" within Shahe. Not every rural production unit can be as fortunate as Shahe.

There is some comment about the lack of official means of transport - buses, lorries and so forth - within Xuhuai. County authorities in Xinyi county for example have sought to remove such difficulties by encouraging individuals to engage in long- and short-distance haulage of rural produce (Lu Hongyi et.al.). The peasants appear to have responded to such attempts in Xinyi although it is interesting to note that much individual transportation remains unmechanised (hand-pulled carts; horse and cart and so forth) and is thus restricted in terms of distance and in the quantity that can be carried. Nevertheless, Lu Hongyi et.al. claim that even this limited improvement in transportation has done much to promote the development of sideline undertakings in Xinyi. What were previously regarded as "waste" materials for example, are now transported and made available as raw materials becoming new sources of income and employment. However, some problems still remain for example, with grain drying and storage (Liu Zheng (b); Hu Wenhu).

Little more can be said about the commercial infrastructure of Xuhuai. The major commercial difficulties it would seem, arise in the official commercial organs. Despite the scarcity of materials concerned with commercial infrastructure, there seems little doubt that the impact of commerce upon rural economic development in Xuhuai merely confirms the conclusion already reached in previous sections that development, in the current-phase at least, remains uneven and far from striking.

6. CONCLUSIONS

A People's Daily commentary 29.11.1984 reporting from Haian county stated that (k.3) "the greatest revelation of Huaian county's experience is that rural areas with an intermediate level of development can also speed up the development of their economies". The experience of Xuhuai as a whole does not suggest a very optimistic interpretation of this "speeding-up".

Development in Xuhuai remains patchy and uneven. To be sure some production units are experiencing real development in their economies but others remain backward. As Red Flag 19.5.1980 (p. 39) states:

"Some places are still very poor, particularly in the old liberated areas in the Northern Huai river area ... where a considerable number of communes and brigades do not really have any substantial resources and the peasants' life is still very poor".

Without doubt the development exhibited by Xuhuai's rural economy continues to lag behind that of much of Southern Jiangsu (People's Daily, 16.3.1984).

Localised development is possible and evident. The strategy of using collective accumulation funds, derived from the profits of rural industrial enterprises and diversified undertakings, to finance improvements in the agricultural resource base, improve levels of mechanisation and so forth is a sound one. However, many production units in Xuhuai remain unable to adopt this strategy because of the initial problems of establishing such enterprises and undertakings.

The ability of rural industry to support agricultural development has been well demonstrated in Southern Jiangsu. In Xuhuai however, rural industry remains relatively weak; initial investment capital remains sparse; accessibility to established large-scale industry is limited, no doubt curtailing the possibility of "putting-out" work - Southern Jiangsu after all, includes the major manufacturing cities of Nanjing, Changzhou, Wuxi, Suzhou and Shanghai; commercial difficulties are still present and so forth.

More might be expected of diversified undertakings - even if they generate far less profits than rural industry and are probably more administratively difficult to extract funds from. However, the development of such undertakings remains problemmatical: grain production still absorbs much land, labour and capital, thereby reducing the possible development of such undertakings; initial investment capital is difficult to find; no doubt some peasants continue to fear the return of a "cutting-off the tails of capitalism" policy and resist calls to diversify production; commercial problems still restrict the growth of the diversified economy and so forth.

Basic grain problems are said to have been solved through a gradual improvement in the last 15 years of the agricultural resource base, the application of advanced agricultural methods and so forth. Yet for the most part the situation of low-output-poor has been replaced only by the high-output-poor trap. That is to say grain production is now said to be relatively stable, basic needs are met, yet this does not mean that peasant income and livelihood are greatly improved. Neither does this preclude the problems that many units continue to have in terms of their inability (because of a lack of land, labour and capital resources surplus to grain requirements) to diversify beyond grain farming. Some units have been able - by virtue of long-standing relative wealth, successful investment of limited collective resources, superior location, good use of bank loans and so forth - to step out of the high-output-poor trap. Through

the accumulation of funds to promote intensive grain production thereby freeing resources for other production tasks, some units have been able to develop their economies in an "all-round" way. As of yet, however, most units still seem to be struggling to rid themselves of the restrictions of grain production, such restrictions being reinforced by the state's perception of Xuhuai as a potentially important source of commodity grain.

A further worrying aspect for development in Xuhuai is the lack of producer goods which has been reported. This could do much to limit enthusiasm for long-term economic development. If rural units manage to accumulate investment funds but find themselves unable to make purchases of the necessary agricultural machinery, tools, fertiliser and so forth, enthusiasm to develop production will inevitably wane. Furthermore, this lack of producer goods puts considerable pressure on the state not only to improve its commercial channels but also to increase output of producer goods. This is something the state is only just beginning to focus its attention upon and something that will inescapably require considerable financial investment as well as managerial re-structuring, and a much better commercial system whether public or private.

This however is not a problem which should come as much of a surprise to the state. It has long espoused the use of agricultural machinery, fertiliser and so forth and yet it seems unable to cope with the demand for such goods now apparent in the Chinese countryside. Such a difficulty is symptomatic of two problems which continue to beset the Chinese economy. The first of these is the inefficiency of the Chinese bureaucracy. While one set of departments outline policy proposals there is little co-ordination with other departments which have important roles to fulfil in the execution of such policies. Thus, while rural demand has been considerably stimulated in the current-phase producer goods remain in short-supply and difficult to purchase in the countryside. The second problem is the short-term outlook which seems to dominate both official and unofficial economic thinking. Emphasis is continually given to the short-term restructuring of rural production management forms while

only lip-service seems to be given to the real and long-established problems which the Chinese countryside faces: soil erosion, insufficient water conservation measures; depletion of soil quality and so forth. The state cannot avoid these problems for much longer - although it must be open to question if the Chinese bureaucracy can be sufficiently motivated and reformed to tackle such problems.

It comes as little surprise to discover that many peasants prefer to concentrate on building new homes and buying consumer goods - bicycles, televisions, watches and so forth - rather than using any personal finances to develop agricultural production. Given previous instability in rural policy, the attractiveness of short-term consumer gains outweigh the rationale of long-term improvements in agricultural resources and so forth. To facilitate more personal investment, the state is attempting to create an atmosphere of stability in the countryside through decisions such as those allowing long-term contracts, the passing of contracts from one generation to the next and so forth. As Liu Xigeng (0.3) comments: "the state's orientation to benefit the peasants should remain unchanged". It remains to be seen if such attempts will encourage peasants to invest in the land or whether they will continue to translate what small gains they have been able to make in recent years into consumer goods.

In Xuhuai, conflicts between long-term and short-term interests, between grain and other sectors of the rural economy remain to the fore. While there is certainly a way out of the high-output-poor trap for rural units in Xuhuai, at present progress remains uneven, skill and experience continue to be short in supply. The potential for economic development is certainly present, it has yet to be fulfilled.

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Figure 1. Jiangsu province : the agricultural regions.
Source She Zhixiang (p.105)

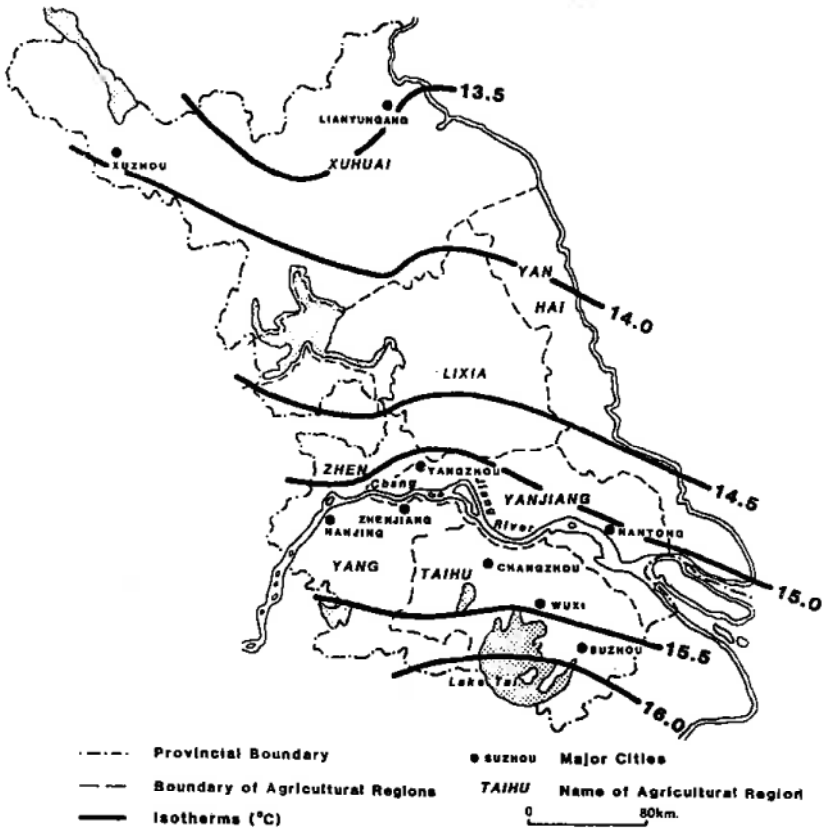

Figure 2. Jiangsu province : mean annual temperatures.
Source : She Zhixiang (p.105)
Shan Shumu et al (p.45)

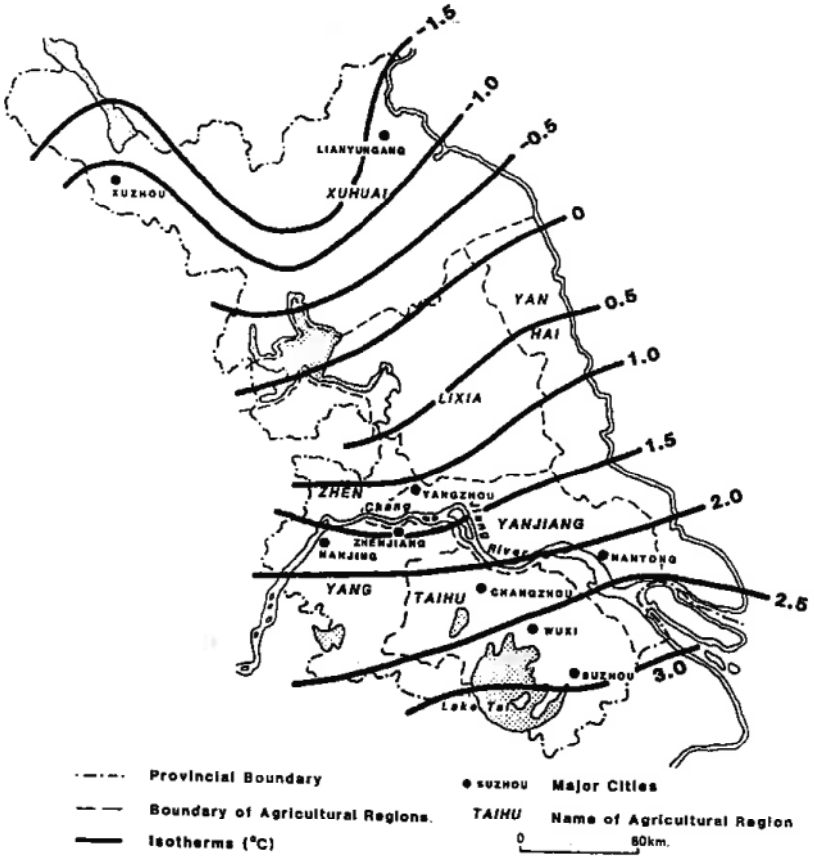

Figure 3. Jiangsu province : mean January temperatures.
Source : She Zhixiang (p.105)
Shan Shumu et al (p.46)

Figure 4. Jiangsu province : mean July temperatures.
Source : She Zhixiang (p.105)
Shan Shumu et al (p.47)

Figure 5. Jiangsu province : mean annual accumulated temperatures of values equal to, or above 10°C.
Source : She Zhixiang (p.105)
Shan Shumu et al (p.50)

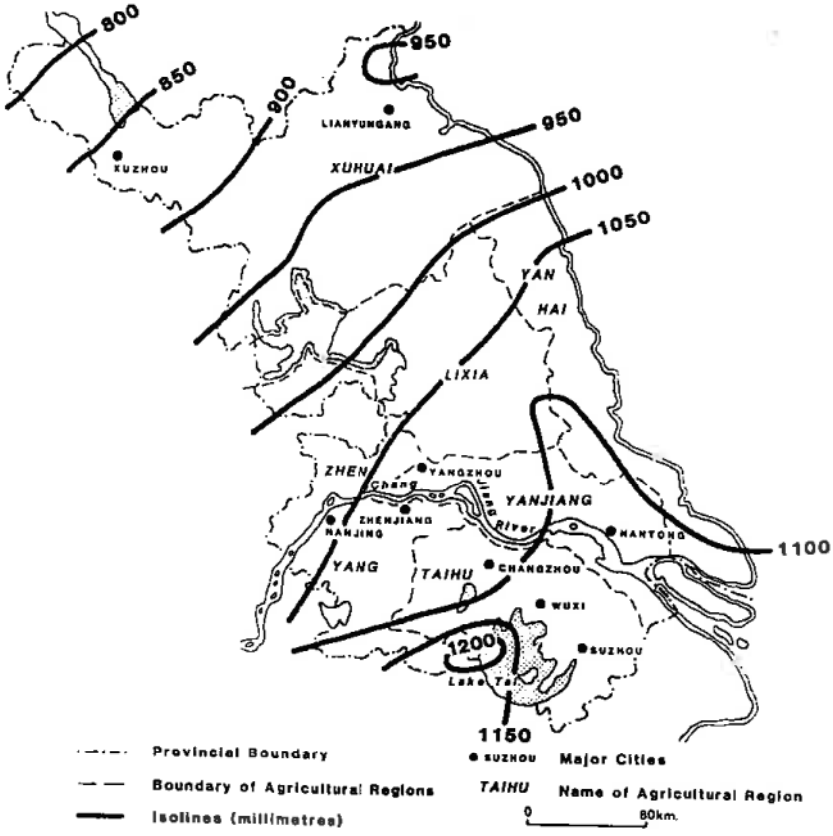

Figure 6. Jiangsu province : mean annual rainfall.
Source : She Zhixiang (p.105)
Shan Shumu et al (p.51)

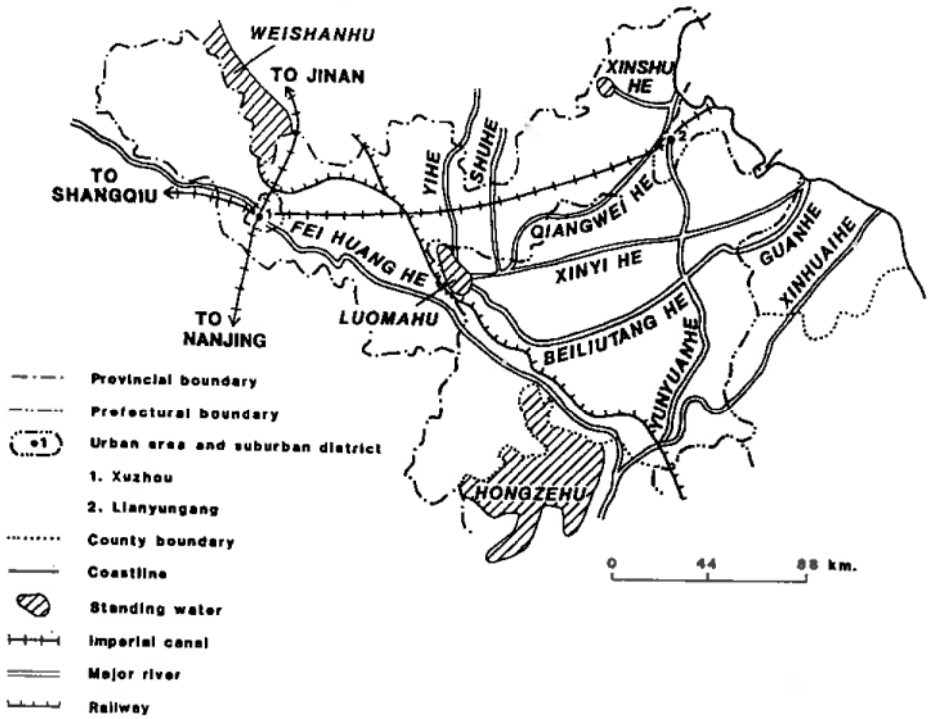

Figure 7. Xuhuai agricultural district : major rivers, railways, and standing water.
Source : Shan Shumi et al (preface)
Zhonghua Renmin Gongheguo Fensheng Dituji (p.11)

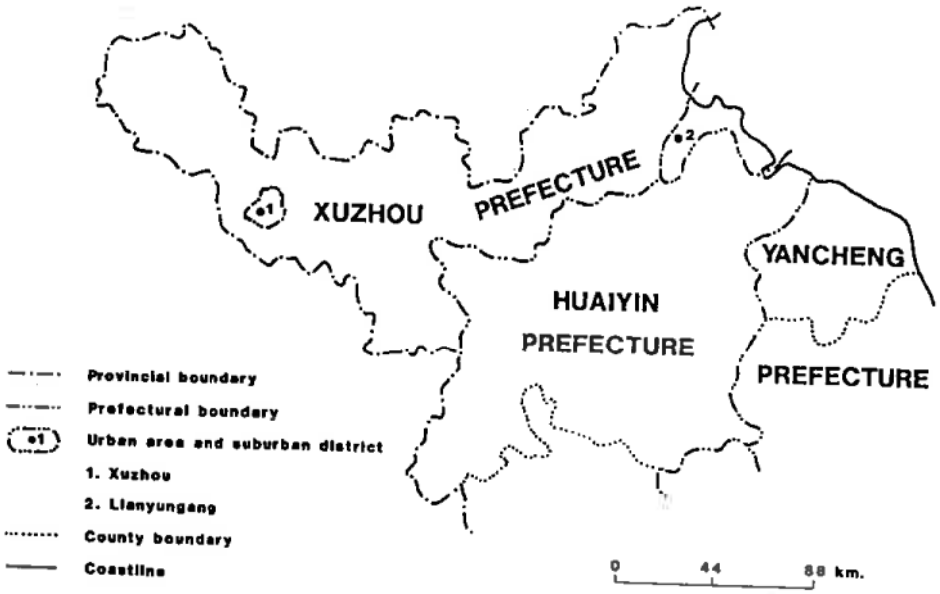

Figure 8. Xuhuai agricultural district : major urban centres and prefectural boundaries.
Source : Shan Shumu et al (Preface)

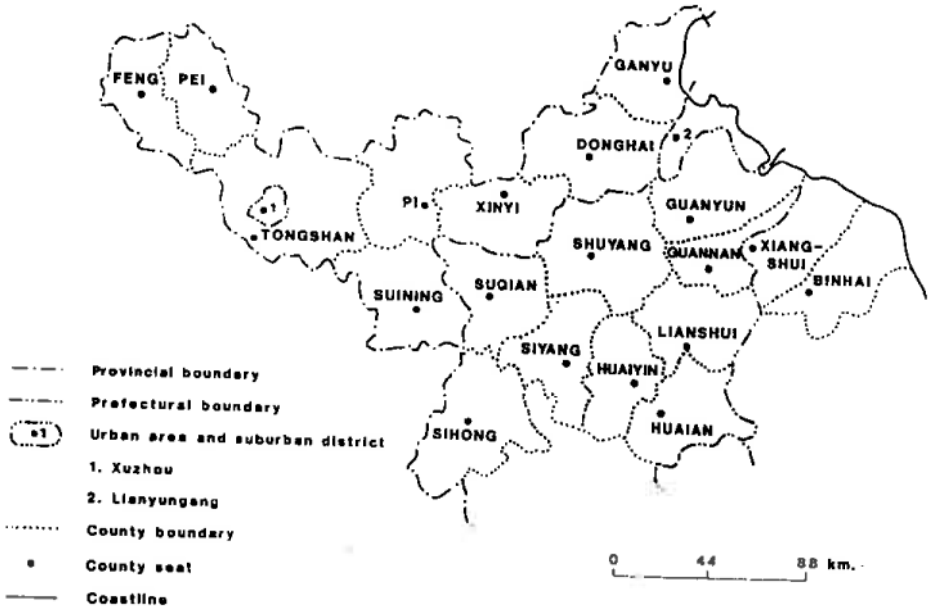

Figure 9. Xuhuai agricultural district : counties and county seats.
Source : Shan Shumu et al (Preface)