

ARE PART-TIME AND ABSENT SMALL FARMERS RATIONAL? QUESTIONING NOBEL ECONOMICS LAUREATE THEODORE W. SCHULTZ

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Abstract

Contrary to Theodore W. Schultz's assertions that part-time farming is efficient and economies of scale have no logical basis and have not stood the test of time and empirical findings, this paper presents that in (1) the low income countries still saddled with traditional agriculture, (2) the low income countries developing towards the high income economy, and (3) the high income countries, numerous part-time and absent farmers earning higher off-farm income tend to under-utilize or idle fragmented small farms without selling or leasing them to full-time farmers to achieve economies of scale which do have logical basis and have stood the test of time and empirical findings, and points out that this is a global problem without solution under private land ownership. The paper also indicates that under private land ownership or possession many farmers voluntarily remain in collective land operation which perpetuates the low individual incentives just as under the public land ownership of the former centrally planned economy in the transitional countries in Central and Eastern Europe and Central Asia. The EU candidates have relied on trade-distorting agricultural subsidies higher than the WTO standards, which would add burdens on the EU once joined, thus impeding EU enlargement. The paper thus proposes the establishment of a law to oblige the lease of unused land to full-time farmers with a minimum lease term so as to solve land waste and fragmentation and enlarge full-time farm sizes; allocation of land to families for operation in the current collectively operated large farms; improvement of services to full-time family farms; transformation of the trade-distorting to non-trade-distorting agricultural subsidies; and promotion of off-farm activities, so as to sustain land use under private land ownership and boost EU enlargement.

In *Transforming Traditional Agriculture* [1964] (1983) which won the 1979 Nobel Economics Prize, 'Schultz makes the very important point that farmers in low income countries are rational and make effective use of their resources. They are poor because their resources are very limited and because the knowledge is not available that would permit them to produce the same output with fewer resources or a larger output from the same resources. If this seems like a commonplace idea, it is so because of the writings of T. W. Schultz.' (Johnson in Schultz [1964] 1983: back cover)

But here the low income countries are *shut* to the high wage stage or high income economy, as Schultz clarifies ([1964] 1983: 11, 15): 'A major new problem has arisen in a number of high income countries in which the agricultural sector has been most successful in adopting and using modern factors of production. It is the problem of adapting agriculture with its high rate of increase in labor productivity to a high income economy in which the demand for farm products is of slow growth. It becomes an acute problem when the labor force required for farming begins to decline at a substantial rate and many of the farm people . . . leave agriculture . . . for nonfarm jobs'. 'But countries still saddled with traditional agriculture are not up against this particular problem.' Thus, he puts aside the issue of 'the adaptation of the agricultural sector to growth in high income countries'.

This paper, however, displays that at least from the mid-1950s on, the low income countries still saddled with traditional agriculture have been increasingly open to the high income economy, as small peasants there would migrate to those rural areas which have entered the high wage stage, cities and abroad to earn higher income as part-time and absent farmers, thus also are up against the particular problem of adapting the agricultural sector to a high income economy.

For example, although prewar **Japan** in **East Asia** was developed, its industrialization was based on its import of foods from and export of industrial goods to colonies. Its agriculture was relatively stagnant. (Oshima 1987: 39, 109). After WWII (World War II), of all farm households, its full-time households accounted for 50% in 1950, 34.8% in 1955, 33.7% in 1960, and 20.5% in 1965; and of total farm household population, persons engaged mainly in farming (both those engaged exclusively in farming and those engaged in farming for more days than in other jobs) took 53.2% in 1955, 42.3% in 1960, and 38.3% in 1965 (JSY 1977: 100; 1981: 109, 113). Schultz ([1964] 1983: 18) also cites that in **Northwest Europe (Austria, Belgium, Denmark, France, West Germany, Ireland, the Netherlands, Norway, Sweden, and the UK)** employment in agriculture declined over one-fifth during 1950-59.

How then about the low income countries which are *open* to the high income economy? Schultz ([1964] 1983: 124) claims that 'in communities where nearby off-farm jobs are readily available on both a part-time basis and a full-time basis the contributions of a human agent become divisible and part-time farming becomes possible; and it can be efficient.'

But this paper presents a reality as contrary to Schultz's assertion. Land tenure reform usually results in fragmented small individual farms. It could raise farmers' incentives for production, increase productivity and release surplus peasants. As the society's demand for grain would decline but not cease, and labor becomes more expensive than large machinery, it would be necessary for the remaining full-time farmers to acquire more land, achieve economies of scale and reduce costs. But a global problem is that in (1) the low income countries still saddled with traditional agriculture, (2) the low income countries developing towards the high income economy, and (3) the high income countries, many able-bodied part-time and absent small farmers earning higher off-farm income inefficiently hold land, without incentive to sell (in order to keep security, enjoy the rural environment and gain from the modern facilities similar to those in cities) or lease it (due to low rent, avoidance of misuse by tenants, jealousy in preventing neighbors from prospering, and self-use as a hobby), even though land property rights have been well defined and market transactions facilitated. This may be out of their rational concern over their direct interests in security. Thus if they could be guaranteed with a back-up basic social welfare and provided with appropriate remuneration, then some of them would be willing to transfer their inefficiently held land in various suitable forms to the full-time farmers for effective use, yet others would still be unwilling to do so. As a result, the remaining full-time small farmers, largely non-viable as the economy develops into the high wage stage, could not easily get the inefficiently held resources for effective use, although the knowledge and other conditions are available to both the full-time, and part-time and absent small farmers that would permit them to produce the same output with fewer resources or a larger output from the same resources. National food security could only be kept at the subsistence level or could not even be maintained without huge government subsidies. Budget burden, food shortage, unnecessary food import, higher domestic and international prices of agricultural goods, artificial food overproduction, land under-utilization or idleness, waste of other resources, environmental deterioration, etc. would also be incurred. Therefore at least some of the part-time and absent small farmers are *not so rational* to the society's and their own fundamental interests. Consequently proper land tenure systems in variable mixed economies should be devised to effect the transfer of their inefficiently held land. But this does not as yet seem like a commonplace idea.

Japan provides a typical example. The Japanese model of rural development began by a land reform for individual ownership in 1946-50 with protection of tenants from eviction, low land rent, and land-holding ceiling of 3 ha in order to prevent the revival of landlordism through repurchasing. It brought in huge incentives to peasants for production, but also maintained numerous fragmented small farms. Meanwhile national rural cooperatives were set up to provide overall services to family farms. Through *construction of rural infrastructure, higher yielding and multiple cropping of rice and other grains, diversified cropping and non-crop agriculture, off-farm employment, and peasant migration to cities and work in town and village firms*, full employment was realized and wages rose, which led to *agricultural mechanization with small machinery*. In 1960, rice self-sufficiency was attained, the first transition (agriculture to industry) completed, labor shortages appeared, and the second transition (industry to services) started. However, even though the land-holding ceiling was relaxed in 1962, land rent control removed in 1970, and landlords were allowed in 1970 to retrieve land after long-term lease and in 1980 after short-term lease, *the inefficient land-holding by part-time and absent small landowners due to the above-mentioned reasons has perpetuated the fragmented small farms* as the remaining obstacle still unresolved to sustainable rural development. In order to be viable and gain higher incomes, farmers and cooperatives lobbied for government protection of the rice production. The ruling party yielded, fearing the loss of votes. Thus costs and prices of rice rose well above prevailing international levels. The government subsidies to farmers resulted in major budget deficits. Rice import prohibition during 1961-93 caused international protests. Following a natural disaster and loss of rice self-sufficiency in 1993, since 1994, cheap rice has had to be imported, and rice self-sufficiency restored by continuous subsidies. In fact, starting from 1960, except for rice and whale, all the foods have been under-self-sufficient, while much land is under-utilized. (Zhou 2001: Chapter 4)

In East Asia, the Japanese model was just repeated by **Taiwan Province of China** in the 1970s and **South Korea** in the 1980s (Hayami & Yamada 1991: 7).

Although **Malaysia, Thailand, Indonesia** and **the Philippines** in **Southeast Asia**, **Bangladesh, India, Pakistan, Sri Lanka; Bhutan** and **Nepal** in **South Asia** are generally at the earlier phases of the Japanese model, inefficient land-holding by part-time and absent landowners have already appeared as rural labor force has been induced to abandon agriculture to go to cities. In those rural areas where many peasants still rely on land for subsistence, there are also landowners who hold land without leasing it. For example, India has not yet got rid of mass poverty and hunger in the rural areas. 'The government has now embarked upon an ambitious target of doubling food production and making India hunger-free in 10 years' (Kanda 1998: 2). But even though, large amount of land is idled by absent landowners who have no intention of renting it out (Kanda 1998: 7). **Cambodia, Laos** and **Vietnam** in Southeast Asia have transformed the former public land ownership under the centrally planned economy into a nominal state - but *de facto* private - land ownership which has resulted in both newly landless and inefficient land-holding. (Zhou 2001: Chapters 5 & 8). The general situation in Southeast Asia is summarized in the 'Call for Papers' by the International Symposium (2002) 'Sustaining Food Security and Managing Natural Resources in Southeast Asia - Challenges for the 21st Century': 'The dynamic economic and demographic development in many regions of Southeast Asia has brought about fundamental changes for rural areas and the agricultural sector. Rapid population growth, urbanization and increasing purchasing power of populations in more developed regions through industrialization induce changes in the quantity, quality and structure of food consumption. At the same time income disparities between urban centers and rural areas and among social/ethnic groups have risen. These developments tend to result in an overexploitation and degradation of natural resources, decreasing agricultural productivity and thus risks of rural livelihoods. *Migration into urban*

centers and further encroachment of agriculture into marginal areas are on the rise creating a vicious circle of increasing poverty and destruction of natural resources.'

In the **United States**, small farmers have been being crowded out of agriculture by large farmers and their number has been declining ever since 1935. But the development in recent decades of off-farm employment pursued as subordinate to the loss-making independent small farming has resulted in inefficient land-holding by part-time and absent small farmers. Although it has not halted small farmers' exiting farming, it indeed has slowed this process. This trend also exists in **Canada** and many **EU** countries. (Zhou 2001: Chapters 9-11).

In **Latin America**, population living in the countryside dropped from 58% in 1950 to 25% in 1995 (Abramovay [1996] 1997: 56). In **Mexico**, in the 20th century, 'rural areas across the heartland have been sustained by', 'or thrived on, the earnings of men and women who *temporarily* migrated to the USA for work. Farmers in many parts of central Mexico made temporary forays up north and used the money they earned to maintain their families back home.' 'If the migrants were relocating to Mexican cities, rather than the USA, the abandonment of villages . . . would seem little more than an inevitable progression because declining federal agricultural subsidies have made it hard for the farming industry to support large numbers of small growers. But migration is a multi-billion-dollar venture for Mexico. Emigrants send home an estimated \$6.3 billion each year. That money – the nation's third largest source of income, behind oil and tourism – has not only provided relatives with money for food, clothing and medicine. Migrants also pooled their money and filled in for strapped or corrupt local governments by supporting public works projects that ranged from paving streets and installing portable water systems to refurbishing churches and furnishing classrooms with computers.' (Thompson 2001: 2)

'At the turn of a new century, however', as the USA increased border control and made illegal crossings more difficult, '*permanent* emigration has squeezed parts of Mexico's rural core to the verge of extinction. Officials in Michoacan State reported that the number of migrants leaving for the USA had increased to some 50,000 people each year. About half of them move permanently to the USA, and more Michoacanos currently live in California, Illinois and Texas than in their homeland. In village Casa Blanca, the families – usually fathers first, followed years later by their wives and children – have been swept north by the desperate torrent that carries floods of immigrants to the USA, leaving widening swaths of central Mexico abandoned. In the 1990s, most of the 5,800 people once living in Casa Blanca have moved to Tulsa, Oklahoma. Fewer than 2,500 remain, and many of them have begun referring to this desert village as a ghost town.' 'Migration experts worry that having entire families and villages transplanted north of the border could pose serious economic consequences because incentives to send money home could wane.' Thus, while President Vincente Fox 'has been a vocal advocate for making the US-Mexican border more open to the free flow of Mexican workers, he has also said that he aims to carry out projects that would help lift rural areas out of poverty to encourage more Mexicans to stay home.' In the week of 11-15 June 2001, 'he inaugurated a micro-lending program aimed at supporting homespun businesses in the poorest regions of the country. But of the 2,000 people who lived in the Michoacan village of Huacao 10 years ago, only 400 remain – nearly all of them are women, children too young to trek across the border or elderly people who feel too weary.' (Thompson 2001: 2)

In **Brazil**, there has been a bimodal of large land estates and small farms. During 1972-96, those larger than 1,000 ha have reduced from 48.3% to 45.1%, while those smaller than 100 ha increased from 16.4% to 20.4%, owing to the ongoing land reform (OECD 1999-7: 21). But Abramovay [1996] (1997: 62-3) reveals that 'An FAO team noted that the most recent rural exodus, at least in the regions where family farming has a significant weight, mainly affects young people. This poses very serious succession problems although I have found no university research on this problem in Brazil. However, this is a subject which provokes increasing

concern in the social movement, as it questions the ability of family farming to reproduce itself. This theme deserves much more attention from the researchers and international organizations dealing with rural development.' Moreover, in the regions where family farming dominates, 'self-employed professionals who live in towns often buy land from farmers in difficulty or from aged farmers.' The State authorities of Santa Catarina were thus worried by not only 'the prospect of a rural exodus involving young people' but also 'the destructive effect on rural communities of the systematic buying of lands by people who were not going to live on them (doctors, lawyers, etc.).'

In **Egypt of Africa**, according to El-Ghonemy ([1996] 1997: 183-6), the rural areas are still less developed as 'the poor are absolutely dependent on public services', 'simply because they do not have the means to acquire literacy, good health, adequate nutritional standards or irrigation facilities through the private sector'. However, there has been a shift from anti-poverty and equalitarian strategies towards economic growth and trade liberalization since 1985 as prompted by the World Bank and IMF. The 1952 land reform law of protecting tenants from eviction and guaranteeing a low level of land rent as seven times the land tax was repealed by the 1993 law which permitted the land rent to be determined by the market forces from 1996-97 on. As a result, the production costs of small farmers increased, many landowners recovered land from numerous tenants who in turn became dependent on being hired as farm workers, their real wages declined, and land rent rose sharply. The share of small landowners of less than 2 ha decreased, while that of medium landowners of 10-20 ha increased. But the free market mechanism has not led to efficient land use: waste of cultivated land became so serious that the Vice Prime Minister and Minister of Agriculture, Livestock, Fisheries and Land Reclamation Yousuf Amin Wali had to declare on 6 April 1998 that idling and wasting cultivated land was illegal, and each province had the power to stop such behavior by administrative means (XHNA 1998).

CEECs (Central and Eastern European countries - 15 in total) and **CIS** (Commonwealth of Independent States - 12 in whole), since the early 1990s, have implemented land privatization or farm restructuring mainly by (1) restitution of land to former private owners, and (2) distribution of individual land (and asset) shares for private ownership or private possession in public ownership to farm members. Individual land owners or possessors then had the choice to either set up individual farms, or remain in the collectively operated large farms. As a result, on one hand, in **domain 1** (individual farms), numerous able-bodied part-time and absent farmers earning higher off-farm income tend to hold fragmented small farms in inefficient use without selling or leasing them to full-time farmers (most land rented out is from the governments, some city dwellers who were restituted land but only till a small part for subsistence due to lacking experience and capital to establish their own farms, and some old peasants). Land market has not been activated by the free market mechanism. The remaining full-time farmers could not easily increase farm size or receive necessary community services. On the other, many large farm members voluntarily remain in collective land operation (**domain 2**). Some landowners have got physical parcels (which are typically fragmented as a combination of good, bad, nearby and distant parcels for reaching equity among landowners) and rented them back to a large farm. Other landowners have obtained paper shares from a large farm and only upon quitting can they be given physical parcels (which are usually also fragmented for equity reasons). In either case, the large farm has distributed the gathered private land to groups of employees for operation (collective operation of *private* land), which, although benefiting from collective help, is a continuation of the operation system under the former centrally planned economy (collective operation of *public* land) and keeps the individual incentives low. Such collectively operated large farms (typically in the CIS) usually also give small household plots to members for individual operation (which proves efficient, demonstrating the possibility of successful family operation upon larger land if

collective help is provided). (Details are not allowed by length limit here but available in Zhou 2001: Chapter 11). The percentage of collective farming (as opposite to individual farming) is shown in Table 1.

CEECs (* EU candidates)		CIS	
1. Slovakia *	84 (1999)	1. Turkmenistan	92 (1995)
2. Czech R. *	77 (1996)	2. Russia	91 (1997)
3. Bulgaria *	48 (95/96)	3. Kazakhstan	88 (1997)
4. Hungary *	46 (05.96)	4. Uzbekistan	86 (1995)
5. Estonia *	37 (1997)	5. Moldova	85 (1995)
6. Lithuania *	33 (1996)	6. Ukraine	85 (1995)
7. Romania *	33 (1997)	7. Belarus	84 (1998)
8. Croatia	26 (1998)	8. Azerbaijan	77 (01.1996)
9. Poland *	18 (1996)	9. Kyrgyzstan	76 (1995)
10. Bosnia & Herzegovina	6 (1997)	10. Georgia	<10 (1996)
11. Latvia *	5 (1997)	11. Armenia	0 (1997)
12. Slovenia *	4 (1997)	12. Tajikistan	n. a.
13. Albania	0 (96/97)		
14. Macedonia	Similar to 8, 10, 12		
15. Yugoslavia	Similar to 8, 10, 12		

Sources: Slovakia: MOA-SK 2000. Others: Zhou 2001: Chapter 11.

	1995	1996	1997	1998	1999
EU-15	41	35	38	45	49 ^p
Czech R	12	13	9	21	25 ^p
Estonia	0	7	5	19 ^p	15 ^e
Hungary	14	9	7	13	20 ^p
Latvia	5	3	4	17 ^p	18 ^e
Lithuania	1	5	7	20 ^p	21 ^e
Poland	18	23	22	23	25 ^p
Romania	10	12	3	25 ^p	20 ^e
Slovakia	18	11	13	26 ^p	25 ^e

* PSE is equivalent to the trade-distorting agricultural subsidies.

p - Provisional.

e - Estimate.

Source: OECD 2000: 25, 101-2.

The CEEC candidates of the EU have given trade-distorting agricultural subsidies at a higher level (around 20%) than the WTO standards (10% of the total value of production for a developing country and 5% for a developed one). Once admitted to the EU, they would have to be provided with an even higher level which the EU currently bears (about 50%, see Table 2) and wants to reduce but has encountered the resistance of its own farmers out of their vested interests. Thus the EU still cannot afford to admit any CEEC candidates after so many years of negotiations, and EU enlargement is impeded.

It is well known that **China** has succeeded in agricultural reform immediately in 1978 when it was started and continuously since then, in sharp contrast to the decade-long stagnant agricultural transition in CEECs and CIS. With public land ownership by village, China has not only aroused peasants' individual incentives for production by allocating land (fragmented and small for equity reasons) to families as the basic level of operation while the village provides general management and services, but also overcome the inefficient holding of fragmented small farms by part-time and absent farmers: the village, with the two-thirds majority agreement of villagers, could keep a smaller land for self-consumption for the part-time and absent farmers, while transferring their inefficiently held land to the full-time farmers to form compact land units and achieve economies of scale. Owing to the efficient land use, China as a developing country has given trade-distorting subsidies to its agriculture by only 2% of the total value of production. (Zhou 2001: Chapter 6-7)

Public land ownership, however, may not be acceptable to many other economies. But no effective solution has been found under private land ownership to overcome the inefficient holding of fragmented small farms by part-time and absent farmers. Those solutions which had functioned from the Middle Ages to the 1950s in Western Europe (land enclosure, primogeniture, massive emigration, land sale due to the then backward conditions of rural areas) would not work now. The EU early retirement scheme proposed for CEECs may encourage old landowners to rent out land (who are more willing to do so anyway), but may not function much for the able-bodied part-time and absent ones. Land consolidation [exchange of the private ownership and location of spatially dispersed parcels of farms to form new holdings containing a single (or as few as possible) parcel(s), with the same (or similar) value as that of the original areas] currently being carried out in some CEECs, CIS and other developing countries incurs enormous individual bargains, and costs tremendous time (even decades), financial and human resources. But after the parcels have been joined, it would not give part-time and absent small landowners much incentive to rent out land, since the joined land would not raise rent a lot in comparison with the much higher off-farm income, as the experiences of Japan and Taiwan Province of China have demonstrated. Moreover, inheritance would easily re-fragment the joined family farm, as the Indian practice has presented. Since the 1970s, some Japanese villages, as a result of measures collectively taken on the village level to preserve a region's agricultural activity, organized agricultural production cooperatives to let full-time farmers operate the unused land of part-time and absent landowners upon the latter's commission. Some production cooperatives were joined by farm households of a whole village, eliminated boundaries among parcels, and thus enlarged farm size and achieved economies of scale. But due to various personal and organizational reasons/problems, some members quit the cooperatives by withdrawing land physically. As a result, setting up of land use cooperatives and their subsequent breaking down have repeatedly occurred. Then, the part-time and absent small landowners could still idle their land, while full-time farms could not increase size (Zhou 2001: Appendix 3.1, Chapters 4-5).

Schultz ([1964] 1983: 9-10) also asserts that the tenet 'that the costs of agricultural products fall as the size of the production unit in agriculture increases' has 'no logical basis'. But even he himself ([1964] 1983: 122-3) has admitted that 'Where human effort (labor) is cheap relative to the price of other agricultural factors, a one-man (or family) farm may be efficient with a small garden-type tractor; on the other hand, where human effort is relatively dear, a one-man farm may be efficient with a combination of two or even three tractors that differ in size and type.' However, 'It requires very special conditions for a fleet of big tractors to be efficient, conditions which in fact rarely exist.' Apparently, large farm size is such a condition. But the rare existence of such conditions does not mean that this tenet has 'no logical basis'. Actually, in 'a high income economy in which the demand for farm products is of slow growth', and 'the labor force required for farming begins to decline at a substantial rate and many of the farm people . . .

leave agriculture . . . for nonfarm jobs' (Schultz [1964] 1983: 11, 15), increase of farm size of the remaining full-time farmers would already be logically possible, and could be realized if the inefficient land-holding by the part-time and absent small farmers could be overcome.

Schultz ([1964] 1983: 9-10, 17-8) further declares that this tenet has not 'stood the test of time' and 'empirical findings'. His empirical findings are that large-scale farming did not play a role in the excellent growth of agricultural production during 1952-59 in Western Europe, which was an 'old, crowded workshop with a population density much greater than Asia's'. However, the fragmented small farms were efficient in a low wage economy when there was little off-farm employment and labor was cheaper than large machinery, such as in Western Europe and Japan during the recovery period after WWII and China during the initial reform period (1978 - mid-1980s). But in a high wage economy when large amount of labor has been absorbed by off-farm activities, and large machinery has thus become cheaper than labor, that tenet would function, as evidenced by Japan, China, USA, other developed members of OECD, and some CEECs and CIS countries (see Zhou 2001: Chapter 4, 7, 9-11). Therefore, unfortunately, it would be Schultz's assertion that has not 'stood the test of time' and 'empirical findings' in the high income economy.

In order to achieve economies of scale, transfer of the inefficiently held land by the part-time and absent farmers to the full-time farmers is essential. But why could not private land ownership succeed in doing so while public land ownership (such as in China) could? The author (Zhou 2001: Chapters 3 & 5) discovers that the fundamental reason is that the private landowners have the right to withdraw their land from land use cooperatives which arrange their unused land to be cultivated by full-time farmers, while the individual users of publicly owned land do not have this power. The author thus proposes a village corporation with financially salable but physically *unwithdrawable* private land shares to allow full-time family farms till the unused land of part-time and absent landowners by paying them a rent. The private landowners, when quitting, could only sell land shares in financial terms, so that although the landowners have changed, their land would always remain physically in the corporation for the use by full-time farmers. This proposal was first published by FAO (Zhou 1997) as a third way beyond the centrally planned economy and free market system to solve the inefficient land-holding by part-time and absent small farmers under private land ownership. It would be possible to apply this proposal in those CEECs and CIS countries where many farmers remain in collective land operation. However, for implementing this proposal, a law should be passed to forbid physical withdrawability of land when private landowners quit land use cooperatives. Considering adoption of such a law may meet psychological barriers, the author hereby recommends alternative solutions, also as a third way beyond the centrally planned economy and free market system, to realize the same purposes under private land ownership while bypassing this possibly sensitive political question.

In **domain 1** individual farms (which exist all over the world).

1. To adopt a law to oblige private landowners to either cultivate their land or lease it (except for some plots for self-consumption) to full-time farmers, with a minimum lease term of one- (preferably five-) year. Full-time farmers, having rented in contiguous parcels of different owners, have the right to remove the boundaries and join parcels together so as to eliminate fragmentation. When the lease is over, the landowner has the right to withdraw his (her) original parcels physically, but he (she) must then either cultivate, or lease them again to the full-time farmers. The rationale for establishing this law is that land is not only a private property, but also a scarce natural resource. An owner has the right to till it, but should have no right to idle it. By implementing such a law, the aim of the land consolidation could be reached, but without the difficulties of exchanging ownership and locations of fragmented small parcels as under the traditional land consolidation, and regardless of the inheritance

which may further fragment the ownership and location of the family farms. Full-time farms could increase size and obtain incentives for longer term investment, land would not be wasted, while part-time and absent landowners would not be crowded out of the rural areas and they could still operate small plots for self-consumption.

Some caveats are desirable.

(1) The above-mentioned law does not intend to replace land reform of distributing land for individual ownership for equity reasons, which is still necessary where a few landlords own large areas of land while many peasants own no or little land (especially in Sub-Saharan Africa, Latin America, and some South and Southeastern Asian countries). Nevertheless, it would be beneficial to adopt it before the land reform, as well as during and after it.

(2) If, in certain earlier stages of rural development, land supply exceeds the demand, and an owner could not find a tenant for his unused land, then he would not be punished by this law. However, in the higher stages of rural development, when part-time and absent landowners tend to hold land in inefficient use, this law would function.

(3) Once relatively stable food overproduction has appeared which could not be absorbed by exports, the ecologically weak cultivated land could be converted back to forestry, grassland, lake land and wetland. The landowners should be given income subsidies, which are allowed by WTO as non-trade-distorting, until they could be self-reliant upon non-grain-agriculture and off-farm activities. The full-time farmers on the normal land should promote the quality and perfectize the varieties of agricultural products, and produce those products with good marketing prospects. They should still produce surplus food to be allocated to these landowners so that a national balance between the supply of and demand for food could be reached, and chronic food overproduction prevented. It would be meaningful to mention a dilemma the EU has been facing in the recent decades: if the unused land of part-time and absent farmers were transferred to full-time farmers, the existing food overproduction would be strengthened; if not, the EU farms would not be able to increase size to be more competitive in the international markets especially in front of the much larger US farms with much lower costs. Here, the author wishes to point out that when there is stable food overproduction, it is the ecologically weak land which should be converted back to forestry, grassland, lake land and wetland, so as to both decrease food overproduction and protect the environment, while the *normal* land inefficiently held by part-time and absent farmers should still be turned over to full-time farmers for more efficient use - not for higher output but for *lower costs*.

1. To establish a family-village dual level operation of land: while the families are the basic level, the village should provide general management, infrastructure, irrigation, facilities, large machinery, financing, forward and backward services. This will improve village services to family farms which are weak in numerous developing and transitional countries.

In **domain 2** collective land operation (which typically exists in CEECs and CIS).

1. To transform the current collectively operated large farm into a large corporate farm (which may not own land but manage the gathered private land) and distribute compact units to full-time families as the basic operation level, since successful farming could only be based on family operation with higher individual incentives, no matter for large farm size such as in the USA and EU or small farm size such as in China and Japan.

2. To form a family – large mother farm dual level operation of land: while family farms should be the basic level, it would be unnecessary to divide large machinery of the large mother farm to households, as the mother farm should provide general management, infrastructure, irrigation, facilities, large machinery, financing, forward and backward services. Once a land owning farming household has become part-time or absent, the mother farm, with the majority agreement of farm members or their representatives, could keep it a smaller land for self-consumption, and allocate the other land to full-time farmers who should

pay it rent. Once the above-mentioned law of obliged lease of unused land to full-time farmers has been adopted, it could be applied here as well.

3. To realize - in **both** domains 1 and 2 - a gradual transformation of the (trade-distorting) direct subsidies on the prices of agricultural products and incomes of farmers, especially the full-time farmers to raise their income to be equivalent to or higher than that of off-farm workers, into (non-trade-distorting) indirect subsidies on the improvement of services, infrastructure, technology and purchase of machinery, in order to promote the full-time farmers' competitive strength so as to earn a higher income through their own better performance.

4. To promote - in **both** domains 1 and 2 - off-farm activities and further rural development in order to absorb surplus peasants, raise rural employment and income, and transfer more land to the remaining full-time farmers to achieve economies of scale.

In so doing, while off-farm activities and rural industrialization will be promoted, agriculture will not be neglected but reinforced. Part-time and absent small landowners will not be crowded out of the rural areas, but the full-time farmers will be strengthened, economies of scale achieved, costs reduced, and trade-distorting agricultural subsidies decreased. The sustainable agricultural and rural development as defined by FAO (SDD-FAO1995: 1) - 'Food security, to be obtained by ensuring an appropriate and sustainable balance between self-sufficiency and self-reliance; employment and income generation in rural areas, particularly to eradicate poverty; and natural resource conservation and environmental protection', will be realized. In particular, EU enlargement towards CEECs will be boosted.

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