AGRARAIN CRISIS AND FARMERS' SUICIDES IN INDIA

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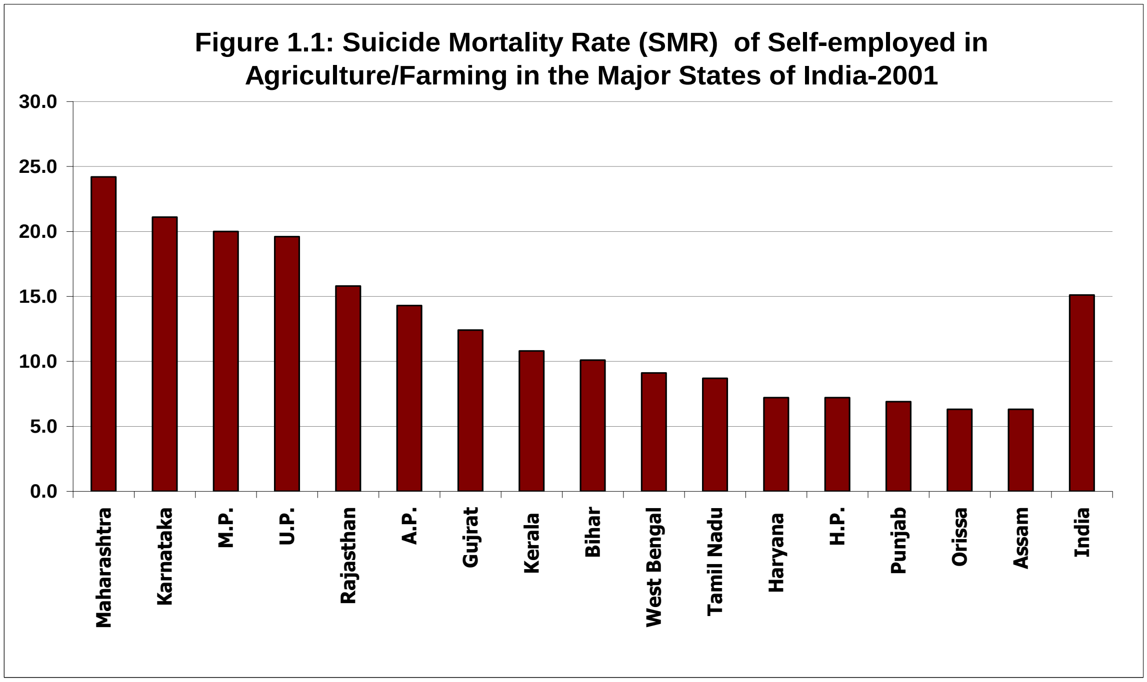
Introduction

Performance of Indian agriculture is characterized by the large fluctuations during the last five decades. Experience so far indicates a few bright spots often followed close on heels by a spate of distress. Some of these bright spots were followed by strong phases of stagnation marked by breaks in the process of development. The response of policy is quite complacent when we pass through the bright spots and hasty when the footsteps of stagnation and misery are visible. Major impediments faced at the time of independence included food insecurity, high density of surplus labour force, weather uncertainties, resource availability, market imperfections, technological stagnation, price variations and regional imbalances (Dantwala, 1996,a; Acharya, 2001). These issues featured in most of the analyses undertaken immediately after independence and surprisingly continue to dog the sector continuously during the last five decades with changing intensity. The responses and development triggers were altered several times, often as a reaction to the exigencies and only after understanding the failure of the design. Most of these responses were taken keeping in view only the then visible crisis in the sector, without tuning to the existing agrarian situation (Reddy and Mishra, 2009). The current phase of severe distress in the farm sector is one such phase that came up along with a new turn in development dynamics of the sector in terms of the aggregate policy changes enveloping globalisation and privatization.

One must not overlook that the agrarian structure of the Indian economy emerged out of a refractory land tenure system that had a deep rooted history (Deshpande etal, 2004). Three specific indicators of the agrarian structure continue to be the dominant issues on the scene. First, the density of small and marginal farmers and the shrinking size of holding. This is coupled with the high share of rainfed areas in the country facing vagaries of monsoon. Second, there is always high density of agricultural workers (marginal farmers and agricultural labourers) with little bargaining power. The transfer of labour from agriculture to non-agricultural sectors (Lewisian process) is quite slow and wherever such transfer is taking place the welfare of the migrating labour has been in peril. Third, the imperfect land market (lease and sale) goes against the interest of the peasants. All these constitute a pre-condition of the distress in the sector.

Immediately after independence land reforms were taken up and these had a myriad success. The story of these institutional reforms was not an unexpected outcome if analysed with the prevailing agrarian structure (Joshi, 1987). Thereafter the agrarian issues were dealt more symptomatically and the policy interventions were frequently accompanied by severe negative externalities. Food insecurity was addressed with the rice wheat technology that provided food grains, but in the process inflicted neglect on coarse cereals and consequently the farmers growing these crops also suffered. Development of irrigation was taken up through surface and groundwater sources and the externalities were soon realised. Market led commercialisation process was introduced and that threatened to bypass the most vulnerable among the farmers. In all these initiatives the agricultural labourers remained mute partners, always to share the distress but rarely to partake gains. The current phase of agrarian crisis has also raised many such questions and specifically some of them directly affecting the vulnerable in the sector. As a routine drill a new policy package has been worked out and this focuses on credit, technology and input delivery system. This package emerged mainly from an ill-founded assumption of a 'technological fatigue' (Narayanamoorthy, 2007; Deshpande and Shah 2007). Basically, it does not flow from the ground and stays in the top-down framework as usual. The package in its application conveniently forgets the agricultural labourers as one among the sufferers.

Among the issues that emerge in this context the responsibility of the State to put in place proper policy assumes prime position. The Constitution of India in its Directive Principles under article 38 (2) provides *"The State shall in particular, strive to minimise the inequalities in income and endeavour to eliminate inequalities in status, facilities and opportunities, not only amongst individuals but also amongst groups of people residing in different areas or engaged in different vocations."* (Bakshi, 2008). Farmers as a group today feel let down by the policies of the State that puts them relatively in disadvantageous position. This is made abundantly clear by many analysts in the recent past (Dev, 2008, Bhalla, 2007). In other words, it is not that the State is discriminatory against the farmer as a group, but the policies are sufficiently provocative in widening the gap between net income of farmers, agricultural labourers on one hand and the remaining professions on the other. This has culminated into a severe distress across the country. The worst outcome of the acute distress is the spate of farmers' suicides. The papers included in this volume deal with this issue in the context of changing scenario and policy response.



Source: Accidental Deaths and Suicides in India, Ministry of Home Affairs, and Government of India extracted from Indiastat.com.

During the decade of nineties the situation aggravated both due to policy failure and the successive droughts at the end of nineties and the prices did not pick up even in the event of low production. This was compounded by the economic reforms which took agricultural sector for granted. The situation was quite alarming in Karnataka, Andhra Pradesh and Maharashtra (Reddy *et. al.,* 1998, Vasavi, 1999, Deshpande, 2002, Sainath, 2005, Mishra, 2005). The spate of farmers' suicides that surfaced in these States was naturally associated with the performance of the sector, along with the other factors that were prominent including advent of WTO, GM varieties, Price collapse, and spurious seeds. Agricultural production in these States always had significant fluctuations (Rao, Subbarao and Ray, 1988), the prices also did not increase despite supply stress. That brought down the gross income flow. On the other side, the cash component in the cost of cultivation has been increasing (Nadkarni, 1988, Reddy,1994 Deshpande and Prachitha 2006). As a consequence the net income flow to the farmer households stagnated. Farmer would borrow to meet the increased cost of cultivation or for irrigation well and pump sets. But the shrinking net income does not allow the payment of debt. As a result, the farmer households had increased indebtedness. Distress among the farmers in the country is genuine and the situation is quite depressing in Andhra Pradesh, Karnataka, Maharashtra, Rajasthan, Orissa, and Assam (Reddy and Mishra, 2009). Though one cannot draw any 'one to one' correspondence between distress in the farm sector and the present spate of suicides in some of the States but the farm and farm related activities have the largest stake in explaining the unfortunate occurrences.

An Interdisciplinary Understanding

Studies on suicides failed to look at the phenomenon from any interdisciplinary perspective. More than 100 years back, confronting pure psychological theories, Durkheim categorized suicides as *egoistic, altruistic, anomic and epidemiological* based on the social response theory to distress (Durkheim, 1952). The *egoistic* person is more prone to suicide as the tolerance level of insult is low and this is observed in the areas where, semi-feudal production relations were prevalent. The *altruistic* suicides involve the individuals with inflated ambitions but unmatched capabilities. The inequality between the expectations and capability dictates the stress (the inequality is **{*Capability*** $\lesseqgtr$ ***Expectations***}. Here again the historical emergences of the production relations along with the process of commercialization play a role. The *anomic* suicides are common among those who withdraw themselves from the group they belong, and largely the ambitious farmers driven by the lure of high income become victims. The circumstances around provoke them to get on to a growth path, which is difficult for them to mange. According to some of the interpreters of Durkheim, distance of an individual from the society is considered as an important reason for suicides. It is argued that a U-shaped relation could be established between suicide rates and the degree of integration of individuals with the society and the norms. Lower assimilation may cause "egoistic" nature whereas total identification may provoke "altruistic" suicides. "Anomic" suicides are a result of a change in the social position of an individual due to any of the socio-economic reasons. The views of Durkheim were vindicated a century after the first book in 1996 (Lester (Eds) 1994)

Epidemiological explanation of suicides refers to a psychological trait and what is referred as an ‘imitation effect’ or the ‘werther effect’. This describes the copying behaviour of the victim following Goethe’s novel *Die Leiden des jungen Werther* (*The Sorrows of Young Werther*) in which a main love lorn character shoots himself but following this in 1774, there was a spate of suicides reportedly with similar method and reasons. This also happened after a hanging took place in Kolkata recently. In that context the WHO, came out with some guidelines to the media about reporting the events of suicides (World Health Organisation, WHO, 2000). There are a few interesting studies by psychologists analyzing the spate of suicides (Behere and Behere, 2008)

Another way of methodically analysing the causes of suicides requires understanding the incidence as culmination of four factors viz., `events', `stressors' 'actors', and triggers. This categorisation stems from the mental set up of the victims (Deshpande, 2002). Among the `events', crop loss, failure of borewell, price crash, daughters' marriage, family problems, property disputes get included. These become `stressors' (stress creators) when two or more such `events' cluster together. Specifically, illness of the individual or any of the family members, heavy borrowings, continued disputes in the family or land related problems usually act as `stressors'. These become lethal in combination with the `events' but further ignition comes through the `actors/catalysts' and `trigger' incidence. 'Actors/ catalysts' create a sense of `insecurity' or `insult' to the potential victim. These include the moneylender, banker, spouse, relatives, and close friends. Most often among relatives, the `actors/catalysts' belong to the opposite sex of that of the potential victim. On the background of the `events' and `stressors', the `actors/catalysts' fire the final act by forcing an occasion to be the `trigger' for the unfortunate incident. Given this complex nature of the phenomena it certainly becomes difficult to pinpoint one particular reason for the suicide (Deshpande, 2002).

Interface with Globalisation

Globalisation, essentially means transformation in social and economic geography, marked by the growth of supra territorial spaces (Scholte, 2000). Economic globalisation is a further distilled component of aggregate globalisation, but generally, the arguments in the literature focus only economic globalization and therefore the discussion is directed towards that. The concept emerged in the process of development thinking immediately after the Second World War but remained active below the surface for a long time to re-emerge prominently during nineties. The process began vigorously after the end of the Cold War, and due to the widespread macroeconomic failures in developing economies and consequent interventions by the world institutions like the IMF, World Bank and WTO. Free flow of goods, services, capital and technology under a competitive market was the core ingredient that provoked and spread globalisation in the world. India was certainly not an exception in this exodus of policy changes.

None in academic world will deny the fact that globalisation process has caused many a changes in the Indian economy and provoked good debates. There are strong and entrenched arguments warning about the detrimental effects of globalization as also an equally powerful defense of it (Stiglitz, 2002 and Bhagwati, 2004). The positions are well fortified on either side, and therefore difficult to resolve without getting into empirics of it. The centrality of Stiglitz's argument in *Globalization and Its Discontents is* the inadequacy of information and the functioning of markets under such conditions resulting into significant vulnerability. Stiglitz bases his argument about the discontent on the theme that when people lack perfect information in taking decisions, the decisions they take are expected to be imperfect causing welfare loss. He wrote that whenever information is incomplete and markets imperfect *in developing countries*, then the invisible hand works most imperfectly. According to him, the story of failed development has the presence of these villains, and the villains are truly loathsome as seen through his writing. He also designates IMF along with the policies emerging out of the text bookish understanding of ground situations, as a member of the main group of villains.

While in the defense of Globalisation Bhagwati re-emphasises the benefits of free trade and the ways to emerge out of the embargoes of the controlled regimes. But he also cautions in no uncertain words that "And so, in these different ways globalisation must be managed so that its fundamentally benign effects are ensured and reinforced' (Bhagwati, 2004, p 35). He further raised concern about the plausible vulnerability in the process of globalisation saying – "the sense of vulnerability or economic insecurity is arguably greater today than in the earlier periods because the growing integration of nations worldwide into the international economy has intensified competitive pressures from actual and potential rivals elsewhere" (Bhagwati, 2004, p 12). This statement clearly brings out the link between the two fortified arguments which are seemingly opposite but worried about similar possibilities.

The Debate

The proponents of globalisation argue that this process would stimulate new forces of production, trade, capital flows, and technology across the countries. Protagonists, like Ohmae and Naisbitt have stated that this is a march towards the ultimate of a borderless world (Ohmae, 1990 and Naisbitt, 1004). The role of the state would decline, and that of the private individuals would increase leading to high level of efficiency in the production process. This process will consequently change the consumption, production and distribution framework. The decision making will be more in private domain and that will improve on optimal allocation of resources. (Shaw, 1997). They expected that global competition will improve the quality of the products and the framework of distribution. Further, growth in trade will attract investment in production of tradable goods. According to them, globalisation therefore, would also automatically mean liberalisation and participation of private sector in the production process, along with investment. Therefore, those who own assets and are significant partners in the production will benefit due to increased profits. It should also provide greater advantage to people with skills and professional managerial and technical manpower. Large firms, public servants, and credit agencies will certainly find globalisation as an important new-found source of encouragement. Thus, it is at times treated as an inevitable step in the process of development. As stated by the Prime Minister of India that "Globalisation interpreted as a programme seeking to integrate various countries into the global economy is inevitable in an increasingly interdependent world that we live in" (Singh, 1997). All this indicates a political acceptance of the process.

The critics of globalisation take a position that the process involves proliferation of capitalist development, and this is similar to the process of colonialism, which was marked at several points in the history. Weakening of the state in the developing world may expose the vulnerable to the worst disasters in the market. The developed economies are likely to take the best advantage of the situation and maximize their market share with their advantages in access to and control of markets, use of information and advanced production technology (Amin, 1996). The developed world not only has higher income generating capability but also a good hold on the market operations. As against this, historical weaknesses of the developing economies and their dependence on the developed world may put them in a serious vulnerable position. The counter argument is based on a strong belief about the distortion correcting mechanism and capability of the markets. It is also highlighted that the developing world has not any more remained at the receiving end and today it can stand independently in the market negotiations and exert pressure to correct the anomalies.

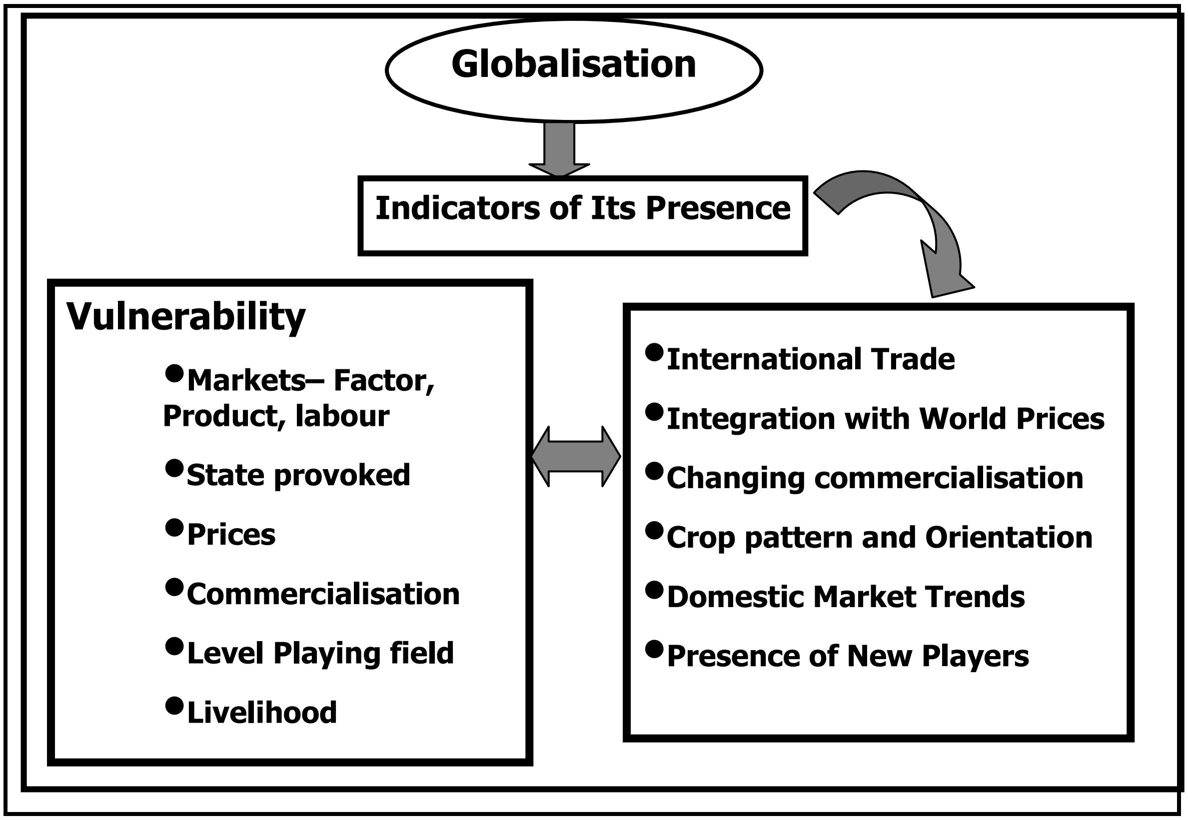
Another strong argument is about the sectoral impact of the process. Globalisation would however cause significant vulnerability in many sectors, and the workers in these sectors. Essentially, globalisation would bring in capital intensive technology and production process, with the more governed by capital assets. As a result, the importance of capital in the entire production process would be quite crucial. A corollary of this is that the labour and employment sector may get neglected. Therefore, in a labour abundant economy the process of globalisation is likely to lead, higher unemployment, if the rate of employment does not exceed the supply of labour. Alternatively, it will be essential that the process of globalisation creates ancillary industries and work avenues for those who are on the periphery of core sectors. It is most likely that globalisation would create inequality in wage structure and wages in the unorganised sector would be far below the wages in the sun rise sectors. That may create social stress and high inequality in income. On the one hand, skilled workers would tend to benefit through increased wages, whereas unskilled labourers are likely to remain at a stagnant wage level. Among other components that would be impacted in the process of globalisation are uneducated workers, small firms, and livelihood insecurity for the producers/sellers of primary goods.

Given the vulnerability to the forces of globalisation, it is necessary that the process of globalisation must be managed in any developing economic to ensure that the benign effects are assessed well in advance and corrective measures are taken. Without wise management of the process, it will be difficult for any economic institution to create the desired effects. Transition from any economic ideology to another, can never be smoked and requires careful in steering. Therefore, understanding and outlining the negative impacts of globalisation is as necessary for the process has understanding the process in itself. Vulnerability of the weaker is one of the fiercest impacts of globalisation and that needs to be understood not only to warn the policymakers but also to suggest ways and means to bring these vulnerable sectors and sections into mainstream development process.

Theoretical Position

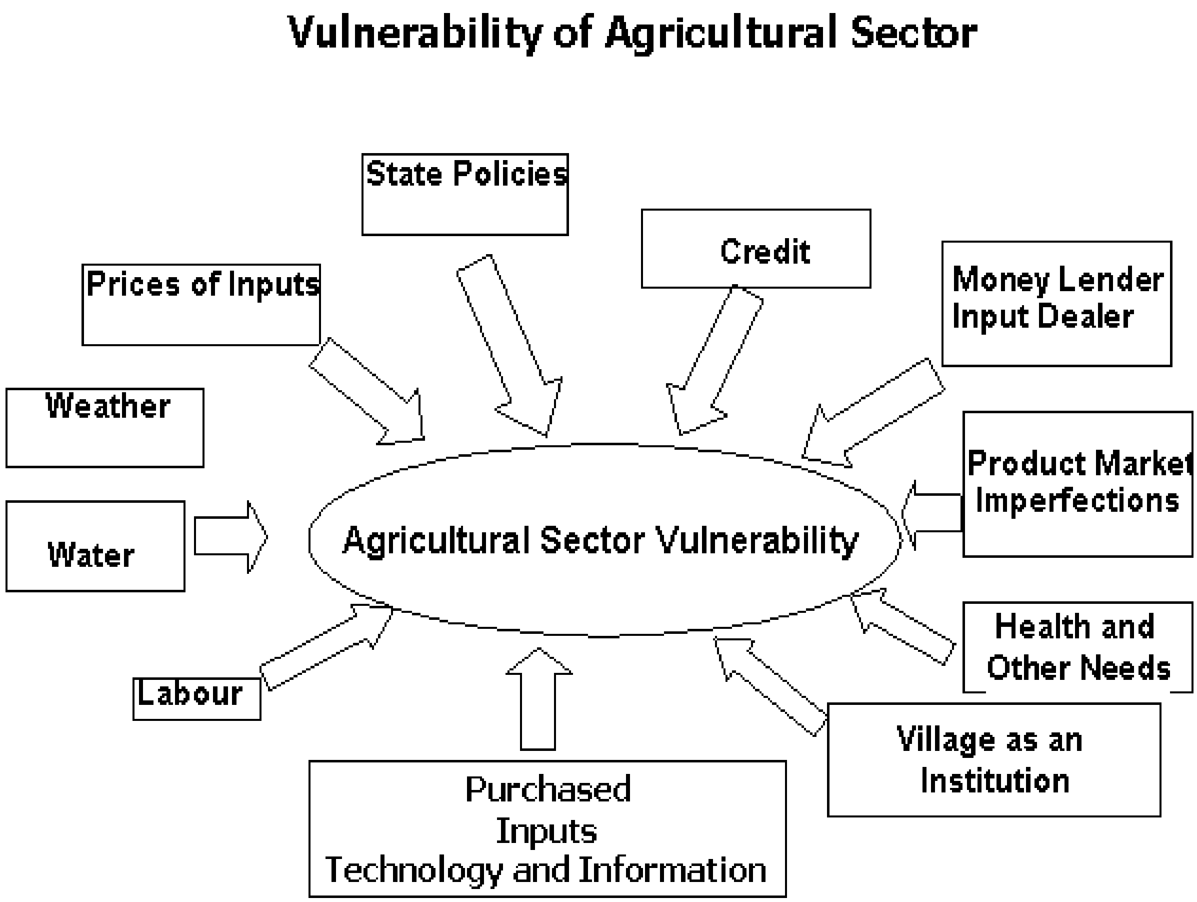
The process of globalization in the world began simultaneously with the demand and supply side pressures. Many of the developed nations vied for the access to the huge markets in developing economies. Till nineties many developing economies were following a strict protective policy in their international trade. Their trade was rather dictated by the domestic demand and the surpluses generated in the economy, than an engine of growth. Nevertheless, at the same time a number of developing economies were looking out for growth opportunities based on trade. As a result the policy originated taking advantage of the economic conditions prevailing then in the two parts of the world.

Figure 1.2: Connecting Theoretically



Globalisation necessarily underscores need of intensification of international trade, desired to harness the comparative advantages in production and consumption of goods and services. This allows the free flow of commodities across the world and the market mechanism takes care of the structure and quality of growth. Slowly the domestic markets start integrating with the world prices and the composition of the commodities in the markets change in favour of consumers. In a straight neo-classical framework, forces of demand are expected to dominate and dictate the market structure and trends. As a final consequence trade decides the aggregate demand in the economy. Therefore, the trade, integration of the domestic market with the world market, and changes in the process of commercialization impact the structure of demand. It also brings about changes in the operations in the domestic market and the parameters dictating the pattern of growth. All these impact the production, consumption and distribution in the economy. Along with this we have the reducing role of the State, and thus an innate withdrawal of the protection to the vulnerable. In Indian context over the last six decades the presence of state is almost visible in every sphere in the agricultural sector. The prices in the factor markets (fertilizers, pesticides, water, minimum wages) are rather controlled by the state and so also the product market prices thorough the APMC Act and Minimum Support Prices and market intervention schemes. Farmers' organisations in the country have unequivocally expressed their displeasure at handling of these interventions. Inevitably, the changes due to globalisation will introduce new counters of vulnerability and those may have significant welfare and policy implications.

Figure 1.3:



In Indian context the arguments need to begin from the understanding the unorganized part of the economy and then to proceed towards the arguments pertaining to the impact pf globalisation. Needless to emphasise that agricultural and allied activities continue to be main unorganized economic occupation of the majority of the people in India. The sector is far from being ready to be compared with other similar economies. More than 60 percent farming activity still depends on the monsoon and faces weather uncertainties. Besides it is the most fragmented sector with 80 percent of the stakeholders being small and marginal farmers. Their access to the factor or the product markets is far from a free entry-exit.

Vulnerability of Agricultural Sector

Most prominent among the impact indicators is the increase in vulnerability across sectors of the economy. Agricultural sector operates under a large number of constraints. Agricultural activities are seemingly carried out in a private domain, and therefore there is a strong belief that most of the decisions in the sectors are taken by the farmers. Reality however lies elsewhere. The state policies dictate prices of most of the factors of production required for agriculture: electricity, water fertilisers, pesticides or minimum wages. Therefore, the role of the state in decision-making process of the farmers is quite prominent and well entrenched. The credit market operations are largely dictated by the credit policy of the central bank as well as the difficulties in access to credit. Difficulties in accessing institutional credit compel the farmer to approach moneylenders and a new emerging institution, namely the input dealer. Farmers often approach the input dealer's for their regular requirements of inputs. Owing to the paucity of cash in hand, the farmer is compelled to ask the input dealer for concessions , and that provides a good opportunity for the input dealer to don the role of moneylender and at the same time , sell the inputs with best profits. This is compounded by the fact of dwindling number of the extension workers, which is a natural administrative process that remained unattended for corrections. Weather uncertainties, availability of irrigation water, and the inputs like fertilisers, pesticides; cause concern. They have always been problems to deal with in the agricultural sector. These are compounded by product market imperfections, and the price fluctuations that the farmer faces. Large number of agitations in India has been focused on prices of inputs or the product market imperfections. The process of globalisation, intensified some of these concerns , both because of the prominence of trade and resulting commercialisation process in the agricultural sector.

Sixty Years of Agrarian Change

Six decades of developments in agricultural sector of India caused many significant agrarian changes; somehow, a large number of them went unobserved in terms of their externalities. There are four prominent areas which could be considered to understand the agrarian changes during this period. First, it is the land distribution and use pattern of land that caused a significant amend in the structure of agrarian organization. The sector is more recognized now as bottom heavy distribution of land holding. This occurred simultaneously due to the demographic pressure on one hand and the model of development adopted in the planning process on the other. Deliberate progression of commercialization in agriculture took its toll on the changing structure. As a result over years, undoubtedly we have increased the number of marginal and small farmers from about 49 million holdings in 1970-71 to 98 million holdings in 2000-01. The percent of small and marginal farmers to total number of holdings was about 70 per cent in 1970-71 and that has increased to 82 per cent, leaving only 18 per cent of the farmers in the economically viable farm mode. The hind sight of this is that more number of farm holdings have become economically non-viable during these decades. This also has a telling impact on the area under cultivation owned by the small and marginal farmers, which is declining significantly (see annexure tables 1.1 and 1.2). It is agonizing to note that the increase in the density of small and marginal has a rate of growth more that could be explained by the increasing farming population. Therefore, it is sure that many holdings were fragmented under economic pressure. This process of marginalization became very strong in some of the states whereas, it has been serious in some others. The prominent among these are Karnataka, Maharashtra, Madhya Pradesh and Tamilnadu. As an effect this has also led to marginalization of the farmers as a consumers and producers.

The second impact on the agrarian structure is due to the changes in technology. During mid-sixties, we have adopted 'seed - water – fertilizer' based technology which was cash intensive and supply pushed. On the cost side, that has increased the cost of cultivation significantly and dependence of the farmer on the factor markets. Increase in the cost of cultivation squeezed the net income of the farm households unsupported by comparable increase in the product prices. Besides, the slow pace of development of agrarian infrastructure (irrigation, availability of inputs, extension, reach of the intended development programmes as reflected in the Situation survey report), comes as the third important determinant of agrarian structure. It is well known that rainfed farming envelops a large number of small and marginal farmers especially in the states of Karnataka, Orissa, Madhya Pradesh and Maharashtra. Increasing cost of cultivation on one side due to significant increase in the input prices, technology, and un-protected farming based on the monsoon on the other makes the farmers hopelessly vulnerable. As a response to these bottlenecks, agrarian structure changed. Further many amendments have occurred due to the supply of technology and changes in agricultural administration. These two have significantly altered during late 70s, 80s and 90s. The presence of extension workers in the early 70s across the villages in India, is nowhere to be seen now both due to least emphasis on extension and stronger presence of input dealers. Naturally, in the face of proper extension support, farmers now have to depend on the input dealers as their next door extension workers. Lastly, it is the availability of inputs which includes fertilizers, seeds, pesticides and above all credit. Small and marginal farmers are always at the receiving end in the credit market. In the policy documents they are given top priority, however when it comes to actual distribution of credit, the small and marginal farmers depend largely on the traders, moneylenders and others as against the institutional sources. All these agrarian transformations inflicted compounding impact on the vulnerability of the farmers. However, one cannot single out any one of these villains to as the cause of distress; it is more the cumulative effect and failure of policy (to attend to these) that has led to the present agrarian crisis.

The papers presented in this seminar could be broadly grouped into five groups. The first group includes the discussion on the changing agrarian structure and placing these changes at the root of the crisis in the sector. The crescendo of the agrarian crisis is increasing and the impact could be disastrous. The second group of authors deals with globalisation as an important player in aggravating the crisis. The impact of the agrarian crisis is varied across the states and surprisingly it is located in a few States of the country. These are also the regions of future promise in agricultural development of the country. The third group of papers includes studies across states that include Punjab, Maharashtra and Maharashtra. In the fourth group of papers largely focus on indebtedness and the credit market imperfections, whereas, the last group brings out the social facets of the current crisis. It is true that agrarian crisis in the country is worrisome but that requires looking into the alleviatory policy rather than only highlighting the prominent factors of the crisis. The last group brings forth various components of the agrarian crisis and attempts to provide policy leads for dealing with it. We discuss below these four groups in the sequence stated above.

Crescendo of the Agrarian Crisis

Changes in the agrarian structure of India have not gone unnoticed but surely have remained unattended on policy front. More often researchers make a mistake of treating the two as independent but it is the agrarian crisis that manifests itself into agricultural crisis. Recent studies in India have underscored a strong opinion that several changes in the agrarian structure have been behind the stagnation in productivity and farm sector distress. One of the major changes in the agrarian structure has been a growing predominance of small and marginal farmers. This does not stop at the process of marginal size of land holding but manifests itself into 'marginalisation' of the peasantry itself. And yet the state policy over the years has not taken serious cognizance of this. The highest incidence of farmers suicides reported in the group by various studies suggests the very neglect of the state policy towards this problem. Reddy and Srijit (wherever references are not given please note that the papers are included in this volume) open the discussion on the agrarian crisis with a special attention to aggravating resource and institutional constraints, faced by small and marginal farmers since the initiation of economic reforms. Referring to well established theoretical and practical evidence, they showed that small size itself has not been a constraint on efficiency, but the main bottleneck is in the way of accessing formal credit and insurance. This prevents them from adopting high productivity crops and enhance returns. Apart from these, small farmers also face high transaction costs and low bargaining power resulting in high input costs and low prices for output which leave them with poor returns. Here the State support to resource poor farmers for enabling them better access to physical, human and social assets could help. This could be in terms of support to education, irrigation, transport, roads, cold chains, greenhouses and good quality of seed. Reddy and Srijit systematically argue that the economic reform agenda of the last two decades with increasing emphasis on the role of market and squeezing state support together extensively destabilized livelihoods of small and marginal farmers. They clearly document the link between retrogression in state support since 1990s on one hand and growing dependency on high interest bearing non-institutional agencies on the other. Declining share of institutional credit, increasing number of undernourished children, downward shift in the status of marginal farmers, abysmal net income from agricultural activities, growing indebtedness and resultant increasing suicides are the resultant of this nexus. Indian farmer is still unprepared for integration into global markets and thus institutional strategies only could enable them to overcome their disabilities.

Vasavi read the data from the states facing such crisis, and her incisive observations bring to the fore primacy of treating agrarian crisis and negative externalities of the technological change seriously. She has scanned all the available evidence to link macro and micro economic factors to social structural and symbolic meanings. She tries to locate the roots of the present crisis in the green revolution and aftermath of that. Green Revolution has served more as a model of modern agriculture to trap the peasants in the web of market and induces a range of new risks into the lives of farmers. It has also caused the knowledge dissonance. She traces the root of distress in the conditions created due to the wrong technology compounded by ill-formulated policy and social structuring of commercial agriculture. She refers to this phenomenon as the 'individualization of agriculturists', which makes them severely vulnerable. Further she explains that these trends combined with the larger context of neo-liberal policies accounts for the making of the crisis where agricultural issues and agriculturists are in a state of 'advanced marginalization' and where large numbers of agriculturists have taken their lives. She concludes that "The suicides are not the crisis or a form of crises but are only symptoms and expressions of the deeper structural problems of Indian agriculture and the agrarian system itself." we can only add that the crescendo of the agrarian crisis is rising and if not met with proper policy may cause severe damage to the sector.

One of the major determinants of the agrarian structure is the performance of domestic market. The distortions in domestic market put the farmer in critical situations and the existing safety net programmes are unable to rescue (Deshpande, 2005). Singhal's paper tries to get into some of thee issues in the context of domestic markets and after critically reviewing the domestic marketing asks for proper institutional set up. He points out the bad state of agricultural marketing marred with infrastructural bottlenecks that have emerged as major hurdle in getting remunerative price to the farmers despite following free market policies in the 1990s. He also points out that the market conditions which create a space for exploitation of farming community due their unorganized nature vis a-vis presence of organized trading community.

Externalities of Globalisation

The basic theme of the seminar was to understand the link between the process of globalosation and the farm sector distress which culminated into a spate of suicides. The agrarian crisis that reached a critical level in some of the states began almost three decades back, when the new model of technological change was introduced in the country. The decade of nineties saw a few important changes taking place and directly influencing the sector. Opening of the international market for agricultural commodities was one such step. On one side it is well accepted that Indian farmer need to participate in the international market, but on the other it is also critical to ascertain whether the farmer is ready for such transition. What will be the impact of this change? Whether an average Indian farmer has sufficient information to understand the nuances in international trade? Have we got the required institutional framework for this changeover? We have such irritating questions to answer and the answers are well known but not incorporated in the policy.

The question of linking the process of globalisation to the agrarian distress is quite complex and one need a clear understanding on both sides. It is true that the crisis deepened during nineties along with the introduction with the new economic policy, but such deepening went unnoticed due to policy lassitude. Not that the high density of non-viable farms and farmers is unknown to the policy makers and also it cannot be believed that nobody knew about their weak position in participating in domestic market, least to think about the international market. The paper by Deshpande addresses to the discussion on the process of globalisation and after reviewing the debate he comes down to analyse the spate of suicides. Overtly no one can hold, globalisation alone to be responsible for the agrarian crisis but it is not denied that the externalities of globalisation contributed to the deepening of the crisis. This happened mainly due to the indolence on policy front to deal with the known problems. Deshpande brings out experience along with the policy interventions from Karnataka.

Reducing food production, declining crop yield, increasing cost of cultivation, growing indebtedness, declining net farm income and recent farmers' suicides have occurred in the phase of economic reforms initiated in particularly in agriculture sector in early 1990s. On this background, Sidhu raised serious doubts and attempts to check validity of the statement that the current situation faced by Indian agriculture is on account of globalisation and he probed further into the other factors. He took a review of trade scenario of Indian agriculture in reform periods along with changes taking place in domestic agricultural economy viz., changing agrarian structure, declining of area per agricultural workers and capital formation, slowdown in foodgrain production, growing indebtedness in farm sector and nature of indebtedness. The scenario of agriculture crisis in India discussed in the paper clearly indicates that roots of the crisis are within the economy and holding globalisation responsible is a myth, not a reality. Finally he suggests that there is a dire need of formulating the policies keeping in view the interest of small and marginal farmers as their problems are more complex than medium and large farmers and they constitute large chunk, 82 per cent, of the total cultivators.

Devil takes the Almost: Vulnerable Regions and Groups

It is proverbially said that the devil takes the hindmost or the weaker among the lot. One should therefore expect that agrarian crisis and the externalities of the changes in economic policy would impact the weakest among the regions and groups. But that is not the case, and the States severely affected included Andhra Pradesh, Maharashtra, Karnataka, and Punjab. Intriguingly, these are among the most promising agricultural regions of the country and therefore the potential loss to the economy is quite severe. It is strange that on the crust, there is more dissimilarity in the agricultural performance of these states as against similarities. Hence a natural question that seeks answer is about the possible common reasons for such experience. This question can be analytically elucidated from five different angles. First, these are the states which have readily adopted the seed-feed and water technology and achieved progress in that. The cropping pattern changed substantially and it was tuned towards more water intensive crops. Second, the pace of commercialization was faster in these states as compared to the other states in the country. Infrastructure in agriculture also developed faster in these states as compared to the other states. That made available the new inputs to the farmers. Third, the cash component in the cost of cultivation increased here shrinking the net income from cultivation (Nadkarni, 1988, Reddy, 1994). Enough evidence is available now to show that the input prices have grown at a faster rate than the product prices. This has honed the shrinking of net income. Fourth, the number of marginal and small farmers has been increasing faster in these states and that is also accompanied by the increase area under cultivation by these holdings (see annexure tables 1.3 and 1.4). This has brought down the viability of these groups of farmers and that was aggravated by the increasing cost. Last, the changes in economic policy during eighties and nineties have taken farm sector for granted and the externalities of the changes during nineties have impacted the sector badly. One of the important changes seen in the decade of nineties is the increased consumerism and the changes in prices of urban goods. Relative prices of the farm product were more depressed and that brought pressure on credit demand. Therefore, it is quite alarming that the states affected will impact the farm sector severely and the experience will soon engulf the other regions.

Andhra Pradesh is a typical example of this unleashed commercialization during eighties and nineties coupled with sharply increasing marginalization. The area operated by small and marginal farmers in Andhra Pradesh has increased by 17 percent points (between 1980 and 2001) whereas, the number of holdings have increased only by about 9 percent points. That is a clear evidence of marginalization of land base. Galab and Revathi in their paper raise serious question on economic reforms introduced by the state since last decade. They link manifestation of agrarian crisis with the state's aggressive economic reforms and existed regional disparities in the State. They hold growing dependence on commercial crops, ground water for irrigation, informal credit, markets for inputs and volatile output prices and absence of regulation on quality of inputs as the reasons for the increasing distress. They indicated a direct link of the spate of suicides to high indebtedness, largely resulted due to mismatch between expenditures on education, health and consumption and net incomes of the farmers from agricultural activities.

Prabhakar Reddy on the other hand examined the genesis of agrarian crisis in Andhra Pradesh based on field work in the four worst affected districts viz., Anantapur, Guntur, Warangal and Karimnagar. He takes into consideration lack of sufficient rainfall, irrigation deficits and an increasingly high burden of input costs due to withdrawal of government subsidies on key inputs and expenditure on sinking bore wells in explaining the plight of small and marginal farmers in Telangana and Rayalaseema regions. Apart from these, some of the disheartening facts brought out by the paper includes a) near absence of cheaper institutional credit and rise of interlocking market in the regions in which input market, output market and credit market are handled by the traders/moneylenders only, b) absence of extension services and free hand given to private agencies for supplying spurious seeds and pesticides c) risk prone cultivation on high cost leased land on oral tenancy terms, d) absence of minimum support price of agriculture produce and e) declining public investment in agriculture and total absence of spending on maintenance of tanks and ponds. The paper maintains that failure of extension services, and mushrooming of spurious seeds and pesticides companies, the absence of regulatory mechanisms to control their activities and propagation are the consequences of policy changes that have taken places in the state.

Punjab has always served as the pride point of India's achievement in agriculture. The state led the green revolution and the farmers of Punjab shouldered the responsibility of pulling out the country from food scarcity to food sustainability. Farmers' suicides cases from Punjab have perturbed many researchers and policy makers since the state has been one of the leading examples in transforming the state of agriculture through green revolution technology. There are three papers analyzing the situation in Punjab. Based on available literature and primary survey conducted in suicide affected districts, Iyer and Arora highlight socio-economic and political aspects of farmers' suicides in Punjab since 1990s. Anita Gill discusses the question of "Life and Debt", thereby indicting credit as the main villain of the story. While arguing that she also takes note of low yield, increasing cost of cultivation and declining net farm income. All of them discuss the problems of indebtedness She makes a few major points a) over the years the share of agricultural income has declined with negligible shift of workforce from the sector, b) the benefits of green revolution enjoyed by all classes of cultivators by mid 1990s, are now facing the problems of erosion in the net income as result of declining productivity, increasing cost of cultivation and living, un -remunerative prices for the produce and freeze MSP, c) absence of alternative employment opportunities in such situation forced to borrow farmers heavily both for cultivation and living expenses, d) limited repaying capacity and declining income over the years led to indebtedness and subsequently resulting into mental trauma and suicides, and e) magnitude of indebtedness, the purpose of loans, sources of loans are pointed to be underlying factors farmers suicides in the state. Kalat's paper also takes almost the same line of argument. Iyer and Arora go a little ahead in the analytical process and they noted that the issue was aggravated due to the constant pressures from commission agents to repay the loan either through forcing them to sale the land or continuous humiliations. They highlight that farmers operate in a self created moral and social world, where dignity is of prime importance. If that gets humiliated due to indebtedness, they prefer to commit suicide rather than face continuous humiliation in the society.

Maharashtra is a central Indian state with unduly high share of its area under rainfed conditions. There are four broad regins of Maharashtra namely Western Maharashtra, Konkan, Marathawada and Vidarbha.The area irrigated in Maharashtra is one of the lowest in the country. Among these Marathawada and Vidarbha are the backward regions compared to the others. Agricultural sector of Maharashtra has survived several crises during the last six decades. The droughts of mid sixties and the devastating experience of 1972-73 taught bitter lessons to the policy makers in the State. Development initiatives for agricultural sector and regional imbalances emerged as two major issues to spur the development. The situation in Indian agriculture changed after the introduction of Green Revolution, but in Maharashtra, changes could take place as late as in 1973-74, after the shock of droughts. While the production of food grains has increased, a similar kind of trend is also noticed in the production of commercial crops like oilseeds, cotton, sugarcane, etc. (GoM, 2002). The overall development tilt of the State is towards tertiary sector and that is the trend in most of the other states in the country. Therefore on the overall development scenario, the state is going away from its focus on primary and secondary sector whereas the tertiary sector is emerging powerful growth engine. This trend is affecting Vidarbha and Marathawada significantly.

As a result, the process of commercialization is quite evident in the State of Maharashtra. The commercialization is in response to the market forces as well as the changing demand for the other crops. But in Maharashtra the public policy has caused very significant distortions in the cropping pattern. But all this is happening at the cost of the area under staple food grains of Maharashtra. There is another strange argument supporting the reduction in the area under food grains and that rests on the increased area under High Yielding Varieties (HYVs). All these have caused significant changes in the agrarian structure of the State.

Five important observations emerge out of the analysis of the changes in agrarian structure of Maharashtra. First, the number of marginal and small farmer is increasing at a faster rate than explainable by demographic changes. The shrinking size of holding is steadily imposing non-viability on the peasants. This is enhanced by the increasing cost of cultivation and the technology. Second, the non-viability small size of holding compelled the peasants to undertake commercial crops. They were attracted towards the new crops and varieties least recognising the market led instability in these. Third, the land market was more in favour of the large owners and that created the marginalization of the farmers from weaker sections. Large number of farmers from socially deprived castes lost land under the pressure of this non-viability and non-affordable technology. Four, the restrictions on tenancy created an under-cover tenancy market and this is fiercely exploitative than the tenant exploitation existing before the abolition of tenancy. The small tenants neither can claim benefits from the State led schemes nor they can abandon cultivation (Like a Marathi proverb “Mother does not allow to eat and father is prohibiting begging!”). Last, the large land owners and corporate sector struck exactly on this red hot critical situation by offering good price to the land. When cultivation is not even allowing bare survival, the peasants were left with no other choice than selling the land at the ‘Attractive’ price and join the band of landless labourers. The census of Maharashtra clearly shows increase in agricultural labourers disproportionate to the expected demographic trends. Among the

In this context Nilima Deshmukh’s paper looking at the impact of economic reforms on the cotton growers of vidarbha Region, explains the spate of unfortunate suicides in the region. She points out that eastern part of vidarbha, a rice belt, is less affected in comparison to the western part which is largely known as cotton belt. The major causes identified by Neelima in the case of cotton growers’ in vidarbha region indicate that the cotton farming has no more remained profitable enterprise. Erratic rainfalls, attack of American bollworm pest, spurious seeds and pest and frequent droughts have resulted in low yield or crop failures causing increasing cost of cultivation and deep fall into net income of the farmers. Though the presence of institutional credit could be seen in the region, their scope in credit supply is limited and that too they have been suffering from procedural modalities, political influence and social status of the individuals in farming community. The presence of non-institutional credit suppliers and their nexus with traders have taken the advantage to charge hefty interest rates on one hand and forcing farmers to sell their produce at the lowest prices to those traders on other. This is leading to aggravation of indebtedness among the farmers. Nilima also notes various lapses and inefficiency of state cotton federation and resultant increasing tendency of farmers to sell their produce to private parties at lower rate than that of federation. On one hand these changes in domestic arena continue to affect to these farmers, on other hand liberalisation of trade in agriculture has posed serious threat to their net income due to supply of cotton at much competitive prices by other cotton growing countries.

The initial spate of farmer's suicides was experienced in the State of **Karnataka**. As history tells us, Karnataka has always taken pragmatic initiatives on policy front be it land reforms, democratic decentralisation, understanding regional diversity or human development (through HDI) at desegregated level and understanding WTO for rigorous participation in international trade. Agricultural sector of Karnataka is characterized by vast steppe of drought-prone region and sporadic patches of irrigated area. Thus a large share of agricultural land of the State is exposed to rainfed conditions with severe agro-climatic and resource constraints. Given this, farmers have no other option but to grow low value- high-risk crops at the cost of an erratic performance. Coexisting with this are a few patches of high-value and high-tech agriculture emerging recently in the State. In an overall analysis agricultural sector of the State is known for its achievements on the growth front despite severe climatic and strong resource constraints. As a consequence Karnataka's agriculture is both diversified and segmented in many ways. It is a matter of deep concern that even though this sector directly impacts the overall growth as well as distribution performance of the State economy, it has not been on the forefront in investment portfolio during recent past.

But during last decade, Karnataka State is experiencing a technological fatigue in agriculture, as there is no breakthrough in productivity of many crops in the State and there is a need to break yield barriers. Besides, farmers need to be encouraged to shift from using resource depleting technology to resource augmenting technologies. Depletion of natural resources is taking place at much faster rate than earlier. The unscientific use of water in command areas have resulted in increase of saline and alkaline patches, besides, denying water for the farmers in tail-end of the command. The groundwater exploitation is taking place at an alarming rate without much attention being paid to recharge of groundwater. Loss of Biodiversity and soil degradation has further accentuated the situation. There is also a growing gap between scientific know-how and field levels do-how**.** Fragmented holdings, increase in input prices, reduced ability of farmers to invest, lack of proximity to markets, asymmetric information and reduced investment by public sector have resulted in decline in profitability of agricultural enterprises.

There are two papers addressed to the experience of Karnataka in this volume. Deshpande (2002) in his paper addresses to the wider theoretical and empirical issues. He connects the process of globalisation to the farm sector distress. He also looks into the credit and indebtedness as the reason for such situation. Muzaffar Assadi (1998) places his analysis focused on the issue of political economy. He examines the causes of farmers' suicide in Karnataka from different perspectives and analyses how the capitalist path of development through globalisation is the major factor responsible for the sharpening agrarian crisis in India, especially in the southern states of the country. He takes the position that the stem of agrarian crisis needs to be located in the decade of 1980s when New Farmers' Movement in different parts of India began to raise large number of issues. He articulated the concept of Market Oriented Autonomous Farmers (MOAF), and weaves his analysis around this powerful concept. Such farmers selected suicide to retain their identity as distinct social category at a time when agrarian crisis has become too sharp. Meanwhile how the state tried to play different kinds of politics vis-à-vis the suicide. Further he discusses the condition of the Indian peasantry in a liberal world of economic development. Gender, age and caste factors are also taken into consideration for the analysis of farmers' suicide. He concludes that farmers' suicides were the result of deep or sharpening agrarian crisis emanating from the capitalist development in agriculture, although there are important debates, which attempt to look at the issue of suicide differently. Even though Vasavi,s paper derives lessons from Karnataka, she has deliberated in a theoretical sence.

Indebtedness: The Villain

Studies probing into the factors causing recent farmers suicides have identified indebtedness as one of the major underlying reasons (Assadi, 1998, Revathi, 1998, Deshpande, 2002, Misra, 2005). Changes in the pace and composition of agricultural credit emerged as a significant issue in the context of the farmers' distress in various parts of the country. It is not only the access to credit but also the inadequate supply of institutional credit particularly to small, marginal and semi-medium farmers that came under scanner. This has been forcing farmers to rely on informal sources accompanied with hefty rates of interests (Radhakrishna Committee, 2008). That called for looking into the process of indebtedness and steps to correct the situation.

Clear evidence of market imperfections or poor management of credit in rural areas has been cited.

In any non-agricultural enterprise the flow of income is regular and assured. That makes it easy to service the debts, but in the farm sector and specifically under rainfed condition the possibility of assured income is quite low. Commercial banks do not necessarily prefer to lend to agricultural sector and this is seen from the number of banks that have reached the stipulated 18 percent lending requirement to the agricultural sector (Deshpande in this volume). Given the characteristic of income flow in agriculture credit requirement in farm profession is a necessary component. The episode begins with the meager income generated in the farm profession, which barely meets the requirement of the household. This process is further worsened by the ambitions created, due to increased consumerism and spread of the half baked knowledge about the new technology. As a result, there is always a mismatch between what is earned in aggregate and expenditure in the farm household. Besides this, the income generation in the farm household is always seasonal, at a few points of time in the whole year. The cash flow is not continuous; as a result the farmer is not able to meet any exigencies of cash requirements. The situation is aggravated by the process of documentation inbuilt in the institutional sources of credit.

Taking note of these situations, Ravikesh Srivastava attempts to form a link between credit availability and farmers suicides and further suggests a practical solution to substitute the informal source of financing in the rural areas. He argues that indebtedness is not an overnight phenomenon that occurred suddenly, but result of faulty credit policies followed over the years. To overcome the problem, he brings forth evidence of credit management programme through participatory approach, 'Diversified Agriculture Support Project', successfully implemented by Work Bank in Uttar Pradesh over the five years. The credit management through formation of Farmers' Group or Farmers' Self-help Groups at the village level is according to Srivastava the best alternative to informal source of credit.

Santhanam brings forth the experience of a senior banker to analyse the issue of Farm Credit. He discusses an extensive survey of the measures and programmes being implemented under the rehabilitation package in identified regions(Prime Ministry had announced a comprehensive Rehabilitation Package to mitigate the distress among farmers in 31 identified districts) with their current state of progress. Apart from this, the paper also discuses the role of NABARD augmenting credit flow to various economic activities in the identified distressed region as NABARD has been entrusted to oversee implementation of various measures covered under the package. The package was implemented over a period of three years from 2006-07 to 2008-09 and it included both short-term and long-term credit and non-credit relief measurements. Santhanam suggests some important measures for suicide proofing such as reducing procedural complexities in accessing loans, encouraging organic farming and putting in place the risk mitigation measures (Credit Guarantee Scheme, Cyclical Credit, Crop Insurance and drought, flood warning system) .

Most of the researches on agrarian crisis and farmers' suicides in the country have mostly highlighted situations leading to the unfortunate events. Some focused on economic issues, whereas others on the social aspects. Largely, the behavioural issues remained neglected. Meeta and Rajilochan's earlier work (2006) and the one in this volume look at the phenomenon holistically. Similarly, the work by Gyanmudra is an important piece of work in bringing out strong links of behavioural and social factors with farmers' suicides based on 60 samples of victims' family. She argues that behavioural factors account for 52 per cent explanation whereas; social factors explicate 21 percent of the events. She points out that failure to achieve their expectations lead to frustration and lowering of self-esteem resulting in depression, abuse of alcohol, mental disorders, matrimonial and family disputes and deterioration of quality of life. She does not overlook the importance of economic factors such as successive crop failures and mounting debts as initial triggers in destabilising expectations of the victims. The paper suggests that suicide results from various causative factors hence efforts towards minimization of suicides should be considered through multi-level interventions.

Towards Policy

Farm sector distress in Indian agriculture is not a suddenly erupted phenomenon. The genesis goes back to the planning and implementation of the policies leading to green revolution during mid-sixties. The externalities emerging after the green revolution culminated into the simmering crisis of seventies. This manifested into the farmers' movements as it remained unattended. At the same time the agrarian changes in the farm sector were reaching a crescendo by weakening the livelihood base of the farmers. Tiny size of farms and the marginalized farmers became hallmark of nineties and they were facing increasing non-viability both due to size in contents of the agricultural technology. Market imperfections both in factor and product markets added to the intensity. Therefore attention now should be more on the policy corrections rather than analyzing the causation. Mitigation must take precedence over causation and explanation.

Meeta and Rajivlochan provide some policy leads on such background. They argue that small farms, if provided the requisite knowledge inputs, could well be the key to an economic upturn in the fortunes of farmers. Much however, would depend on the availability of these inputs and on the willingness of the government to provide these. Given the present institutional constraints, policy makers in India need to look at concrete options to enable smallholders to survive not only with dignity but as constructive units in the economy. All field experience shows that it is entirely possible to increase productivity of small farms, provided that due policy support is available. This proviso is a crucial one. It also reflects a basic difference in the underlying assumptions of the strategies proposed. The present strategy which focuses on big business, the private sector and contract farming as a solution to the knowledge gap and setting up of big irrigation projects by government as a solution to the infrastructure gap, sees the farmer as a foot soldier who can have no resources or initiative. All resources are to be provided by big brothers, whether in the government or outside. The alternative solution which suggests that all we really need to do is to empower the farmer by providing knowledge and health inputs and enable him to find his own solution means giving up the big brother role. The policy leads are also provided by Deshpande, Assadi, Reddy and Mishra as well as others. Distress in the farm sector is a fact and it began with with agrarian stress created both due to externalities of the policies and not attending some of the issues on the policy front. More time is lost on reasoning the distrss that attending to the issues. Sadly, whenever it was attended the policies fail short in the required punch. Therefore, now it is time to rethink and put up a policy matrix to deal with the situation. This volume takes such plunge and provides valuable material for the purpose.

Annexure Table 1.1: Number and Percentage Size of Operational Holdings in India
(Number in Millions)

Particulars	1970-71	1980-81	1990-91	2000-01
Marginal	**36.20**	**50.12**	**63.39**	**76.12**
	(50.98)	**(56.39)**	**(59.44)**	**(63.00)**
Small	**13.43**	**16.07**	**20.09**	**22.81**
	(18.92)	**(18.08)**	**(18.84)**	**(18.88)**
Small & Marginal	**49.63**	**66.19**	**83.48**	**98.94**
	(69.89)	**(74.47)**	**(78.29)**	**(81.89)**
Semi-medium	**10.68**	**12.46**	**13.92**	**14.09**
	(15.04)	**(14.01)**	**(13.06)**	**(11.66)**
Medium	**7.93**	**8.07**	**7.58**	**6.57**
	(11.17)	**(9.08)**	**(7.11)**	**(5.44)**
Large	**2.77**	**2.17**	**1.65**	**1.23**
	(3.90)	**(2.44)**	**(1.55)**	**(1.02)**
Total Holdings	71.01	88.88	106.64	120.82
	(100.00)	**(100.00)**	**(100.00)**	**(100.00)**

Note: Figures in Parenthesis are percentages to total holdings
Source: Source: Agricultural Statistics at a glance 2008.

Annexure Table 1.2: Number and Percentage Size of Area Operated in India
(Area in Millions ha)

Particulars	1970-71	1980-81	1990-91	2000-01
Marginal	14.56	19.74	24.89	30.09
	(8.98)	(12.05)	(15.04)	(18.82)
Small	19.28	23.17	28.83	32.26
	(11.89)	(14.14)	(17.42)	(20.17)
Small & Marginal	33.84	42.90	53.72	62.35
	(20.87)	(26.19)	(32.46)	(38.99)
Semi-medium	30.00	34.65	38.38	38.31
	(18.50)	(21.15)	(23.19)	(23.96)
Medium	48.23	48.54	44.75	38.13
	(29.75)	(29.64)	(27.04)	(23.84)
Large	50.06	37.71	28.66	21.12
	(30.88)	(23.02)	(17.32)	(13.21)

Total Holdings	**162.14**	**163.80**	**165.51**	**159.90**
	(100.00)	(100.00)	(100.00)	(100.00)

Note: Figures in Parenthesis are percentages to total area operated
Source: Agricultural Statistics at a glance 2008.

Annexure Table 1.3: Distribution of Small and Marginal Holdings in Major States in India

(Percentage to Total holdings)

States	Marginal (Below 1 Hectare)			Small (1-2 Hect.)			Small and Marginal		
	1980-81	1990-91	2000-01	1980-81	1990-91	2000-01	1980-81	1990-91	2000-01
Andhra Pradesh	51.61	56.10	60.90	21.59	21.20	21.83	**73.20**	**77.30**	**82.73**
Assam	59.31	60.30	59.05	22.76	22.20	21.97	82.07	82.50	81.02
Bihar	75.44	78.60	84.18	11.04	11.10	9.24	86.48	89.70	93.42
Gujarat	24.23	26.30	29.41	21.64	26.00	30.19	45.87	52.30	59.60
Haryana	32.21	40.60	46.07	19.17	19.90	19.24	51.38	60.50	65.31
Himachal Pradesh	55.17	63.20	67.29	21.94	19.90	19.04	77.11	83.10	86.32
Karnataka	34.56	39.20	45.94	24.53	27.50	26.97	**59.09**	**66.70**	**72.91**
Kerala	89.17	92.60	95.16	6.94	5.20	3.41	**96.11**	**97.80**	**98.57**
Madhya Pradesh	32.80	37.30	38.56	19.12	22.80	26.51	**51.92**	**60.10**	**65.07**
Maharashtra	28.07	34.60	47.31	22.46	28.80	28.11	**50.53**	**63.40**	**75.43**
Orissa	46.88	53.60	56.43	26.77	26.20	27.39	73.65	79.80	83.82
Punjab	19.41	26.50	12.34	19.51	18.30	17.35	**38.92**	**44.80**	**29.69**
Rajasthan	29.35	29.70	31.78	19.57	20.00	20.79	48.92	49.70	52.57
Tamil Nadu	69.74	73.10	74.39	16.81	15.90	15.60	**86.55**	**89.00**	**89.99**
Uttar Pradesh	70.56	73.80	76.88	16.27	15.50	14.25	86.83	89.30	91.13
West Bengal	69.68	73.80	80.44	19.55	17.60	14.86	89.23	91.40	95.30
India	**56.39**	**59.40**	**63.00**	**18.08**	**18.80**	**18.88**	**74.47**	**78.20**	**81.89**

Source: Agricultural Census 1991 & Agriculture Statistics at a glance 2008, Ministry of Agriculture, Government of India.

Annexure Table 1.4: Distribution of Area Operated under Small and Marginal Holdings in Major States in India

(Percentage to Total holdings)

States	Marginal (Below 1 Hectare)			Small (1-2 Hect.)			Small and Marginal		
	1980-81	1990-91	2000-01	1980-81	1990-91	2000-01	1980-81	1990-91	2000-01
Andhra Pradesh	13.17	16.40	21.56	16.83	19.60	26.36	**30.00**	**36.00**	**47.91**
Assam	18.68	18.90	19.49	24.00	24.50	23.05	42.68	43.40	42.54
Bihar	26.67	33.40	43.08	14.89	18.20	19.21	41.56	51.60	62.29
Gujarat	3.72	4.80	6.68	9.20	13.00	18.76	12.92	17.80	25.44
Haryana	4.63	8.00	8.93	8.56	12.50	11.88	13.19	20.50	20.81
Himachal Pradesh	14.90	21.30	25.74	20.41	23.30	25.03	35.31	44.60	50.77
Karnataka	6.24	8.70	12.12	13.14	18.70	22.28	**19.38**	**27.40**	**34.40**
Kerala	41.61	48.20	56.21	22.05	21.03	19.10	**63.66**	**69.23**	**75.30**
Madhya Pradesh	4.24	6.40	10.07	8.17	12.60	17.81	**12.41**	**19.00**	**27.88**
Maharashtra	4.55	7.70	14.58	10.93	19.00	25.42	**15.48**	**26.70**	**40.00**
Orissa	15.06	19.70	22.73	22.62	26.90	30.39	37.68	46.60	53.12
Punjab	3.03	4.10	1.94	7.22	8.10	6.02	**10.25**	**12.20**	**7.95**
Rajasthan	3.18	3.50	4.21	6.37	7.00	8.21	9.55	10.50	12.41
Tamil Nadu	24.74	28.30	30.97	22.18	24.00	24.56	**46.92**	**52.30**	**55.53**
Uttar Pradesh	25.68	31.40	36.97	22.61	24.40	24.28	48.29	55.80	61.24
West Bengal	29.16	36.50	49.74	31.22	30.00	28.97	60.38	66.50	78.71
India	12.05	15.00	18.82	14.14	17.40	20.17	**26.19**	**32.40**	**38.99**

Source: Agricultural Census 1991 & Agriculture Statistics at a glance 2008, Ministry of Agriculture, Government of India.

Annexure Table 1.5: State-wise Percentage of Un-irrigated Holdings to Total Holdings of each Class of Holdings in India: 2000-01

States	Marginal	Small	**Small & Marginal**	Semi-Medium	Medium	Large	All
Andhra Pradesh	48.11	53.33	**49.49**	53.05	48.19	47.26	49.86
Assam	94.09	94.38	**94.17**	94.55	94.18	93.68	94.22
Gujarat	64.43	69.91	**67.12**	69.63	69.94	76.04	68.26
Haryana	8.49	6.36	**7.86**	5.60	5.45	6.93	7.10
Himachal Pradesh	73.77	71.22	**73.21**	67.45	61.85	51.21	72.16
Karnataka	69.76	73.66	**71.20**	71.83	68.42	67.65	71.05
Kerala	62.51	41.20	**61.77**	33.12	27.80	35.54	61.36
Madhya Pradesh	72.78	63.54	**69.01**	57.28	47.90	38.46	63.32
Maharashtra	79.30	79.95	**79.57**	79.17	78.43	81.21	79.42
Orissa	63.01	58.77	**61.62**	50.43	43.74	48.46	59.57
Punjab	11.19	4.18	**7.09**	1.58	0.67	0.22	2.84
Rajasthan	63.16	53.94	**59.51**	49.19	51.25	69.54	56.62
Tamil Nadu	54.06	45.08	**52.50**	40.50	36.00	37.35	51.18
Uttar Pradesh	17.23	11.79	**16.38**	10.79	12.07	18.86	15.93
West Bengal	38.96	28.43	**37.32**	21.35	19.55	32.48	36.56
All India	49.25	55.21	**50.73**	54.85	51.99	56.57	51.38

Source: Agricultural Census 2000-01, Ministry of Agriculture

Annexure Table 1.6: State-wise Percentage of Un-irrigated Area Operated to Total Area Operated of each Class of Holdings in India: 2000-01

States	Marginal	Small	Small & Marginal	Semi-Medium	Medium	Large	All
Andhra Pradesh	54.27	64.69	59.84	53.05	73.64	75.93	66.35
Assam	95.70	95.57	95.63	94.55	95.88	92.95	95.49
Gujarat	65.86	72.80	70.90	69.63	78.01	85.84	76.07
Haryana	7.78	7.72	7.74	5.60	8.07	9.90	8.27
Himachal Pradesh	85.18	88.81	86.97	67.45	91.40	89.79	88.82
Karnataka	74.50	80.58	78.44	71.83	83.52	87.86	81.79
Kerala	78.93	75.68	78.11	33.12	69.81	79.56	77.20
Madhya Pradesh	75.54	74.50	74.84	57.28	75.48	76.02	75.30
Maharashtra	81.93	85.99	84.61	79.17	91.63	94.85	88.16
Orissa	73.35	77.65	75.81	50.43	78.08	82.01	76.97
Punjab	9.53	4.97	6.08	1.58	1.43	1.80	2.09
Rajasthan	66.66	66.52	66.56	49.19	71.68	87.15	76.38
Tamil Nadu	59.02	61.84	60.27	40.50	66.30	74.52	62.93
Uttar Pradesh	18.08	18.27	18.16	10.79	23.27	33.67	19.48
West Bengal	46.74	45.69	46.35	21.35	43.17	72.50	46.98
All India	53.87	64.59	59.59	54.85	69.06	76.72	66.13

Source: Agricultural Census 2000-01, Ministry of Agriculture

Annexure Table 1.7: Distribution of Cultivators and Agricultural Labours across the States in India

States	*Percentage to Total Workers (Main and Marginal)*							
	Cultivators				Agricultural laborers			
	1971	**1981**	**1991**	**2001**	**1971**	**1981**	**1991**	**2001**
Himachal Pradesh	70.6	72.92	69.42	65.3	4.17	2.79	3.40	3.1
Haryana	49.1	47.13	40.96	36.0	16.21	21.52	19.74	15.3
Rajasthan	64.9	64.49	61.07	55.3	9.31	8.56	12.63	10.6
Uttar Pradesh	57.8	58.57	53.69	41.1	19.95	16.73	20.08	24.8
Bihar	43.3	43.60	43.89	29.3	38.92	36.20	38.05	48.0
Assam	56.8	Na	44.01	39.1	9.58	Na	10.51	13.2
West Bengal	32.0	29.74	29.24	19.2	26.45	26.22	25.01	25.0
Orissa	49.2	44.14	42.42	29.8	28.28	32.42	32.87	35.0
Gujarat	43.1	38.10	33.72	27.3	22.48	25.30	27.12	24.3
Punjab	42.6	35.37	31.69	22.6	20.11	25.10	24.74	16.3
Madhya Pradesh	52.9	52.25	52.16	42.8	**26.56**	**27.44**	**25.24**	**28.7**
Maharashtra	35.5	36.05	34.04	28.7	29.33	28.16	28.11	26.3
Andhra Pradesh	32.2	32.24	27.67	22.5	**37.92**	**38.46**	**41.77**	**39.6**
Karnataka	40.0	38.28	35.43	29.2	**26.70**	**27.80**	**29.93**	**26.5**
Tamil Nadu	31.3	28.79	24.98	18.4	**30.46**	**33.51**	**36.19**	**31.0**
India	40.6	42.04	39.69	31.7	**26.31**	**26.33**	**27.37**	**26.5**

Source: Census 1971, 1981, 1991 & 2001 of India, Government of India.

Annexure Table 1.8: Selected State-wise Incidence of Indebtedness (IOI) of Households and percentage of Farmers households indebted in Rural Areas in India

	1971	1981	1991	2002	% of Farmer HHs indebted (2002)
Andhra Pradesh	48	26	35	42	82.0
Assam	27	5	6	8	18.1
Bihar	42	13	16	22	33.0
Gujarat	47	19	17	28	51.9
Haryana	35	11	28	27	53.1
Himachal Pradesh	37	12	22	15	33.4
Karnataka	50	24	28	31	61.6
Kerala	34	28	31	39	64.4
Madhya Pradesh	42	21	21	26	50.8
Maharashtra	46	22	22	28	54.8
Orissa	37	20	23	26	47.8
Punjab	54	20	25	26	65.4
Rajasthan	57	25	30	34	52.4
Tamil Nadu	49	29	30	31	74.5
Uttar Pradesh	38	18	19	23	40.3
West Bengal	37	18	26	22	50.1
India	**43**	**20**	**23**	**27**	**48.6**

Source: Household Assets and Liability, NSS Report No. 500, 59th Round (January-December 2003).

Annexure Table 1.9: Estimated Number of Total and Indebted Farmer Households in Each Size Class of Land Possessed in India

Size Class of Land Possessed	Estimated Number of Farmer Households		Estimated Number of Indebted Farmer Households		Prevalence Rate of Indebtedness	Average Outstanding Loan Amount
(ha)	(Lakhs)	(% Share)	(Lakhs)	(% Share)	(Percentage)	(Rs)
<0.01	12.59	1.4	5.71	1.3	45.3	6121
0.01-0.40	292.87	32.8	130.11	30	44.4	6545
0.41-1.00	283.61	31.7	129.21	29.8	45.6	8623
1.01-2.00	160.60	18.0	81.92	18.8	51.0	13762
2.01-4.00	93.50	10.5	54.41	12.5	58.2	23456
4.01-10.00	42.58	4.8	27.73	6.4	65.1	42532
10.00+	7.75	0.8	5.15	1.2	66.4	76232
All Sizes	893.50	100.0	434.24	100.0	48.6	12585

Source: Household Assets and Liability, NSS Report No. 500, 59th Round (January-December 2003).

Annexure Table 1.10: Incidence of Indebtedness based on size of Land Possessed

States	**Marginal (<1.0 ha)**	**Small (1.01-2.0 ha)**	**Semi-Medium (2.01-4.0 ha)**	**Medium (4.01-10.0 ha)**	**Large (10.00+ ha)**
Andhra Pradesh	55.7	21.8	15.1	6.6	0.7
Bihar	86.9	9.2	2.8	0.7	0.6
Gujarat	45.7	21.7	18.3	13.2	1.1
Haryana	52.3	18.3	19.7	8.8	0.9
Karnataka	50.7	22.8	15.9	9.3	1.2
Kerala	87.7	9.1	2.6	0.5	0.1
Madhya Pradesh	33.0	27.1	23.1	13	3.9
Maharashtra	36.0	26.2	23.3	12.2	2.4
Orissa	70.3	20.6	7.3	1.7	0
Punjab	53.3	15.8	17	11.8	2.2
Rajasthan	43.9	19.8	17.8	14.1	4.5
Tamil Nadu	72.6	15.4	9.3	2.2	0.4
Uttar Pradesh	71.3	17.4	7.8	3.4	0.3
West Bengal	88.7	8.5	2.4	0.4	0
India	61.0	18.9	12.5	6.4	1.2

Source: Household Assets and Liability, NSS Report No. 500, 59th Round (January-December 2003).

Annexure Table 1.11: State-wise Percentage Distribution of Outstanding Loan Taken by Farmer Households by Purpose of Loan in India

States	Purpose of Loan								
	Capital Expenditure in Farm Business	Current Expenditure in Farm Business	Non-Farm Business	Consumption Expenditure	Marriages and Ceremonies	Education	Medical Treatment	Other Expenditure	All Purposes
Andhra Pradesh	23.4	38.1	3.2	11.5	0.6	1.4	2.4	10.5	100
Bihar	30.8	8.6	7.6	6.4	22.9	2.3	10.2	11.2	100
Gujarat	20.3	50.3	3.9	6.3	10.2	0.5	3	5.6	100
Haryana	36	26.2	6.8	4.8	14	0	2	10.3	100
Karnataka	30.7	37.5	9.8	5.6	7.4	0.6	0.2	8.1	100
Kerala	11.0	10.4	22.8	10.2	11.2	1.4	2.5	30.5	100
Madhya Pradesh	47.0	21.3	1.4	9.6	14.4	0.1	3.6	2.7	100
Maharashtra	37.9	37.5	4.8	4.2	4.9	0.9	1.5	8.3	100
Orissa	28.9	24.4	11.5	11.4	14	0.1	2.9	6.9	100
Punjab	26.4	36	4.4	8.5	10.2	0	2.6	12	100
Rajasthan	37.5	19.7	2.2	13.8	17.6	0.8	3.9	4.4	100
Tamil Nadu	24.3	25.1	5.5	13.1	8.7	2.6	4.1	16.6	100
Uttar Pradesh	40.3	20.6	7	6.8	11.8	0.2	6.1	7.1	100
West Bengal	24.4	21.3	10.3	7.2	11.1	0.5	5.1	20.1	100
India	**30.6**	**27.8**	**6.7**	**8.8**	**11.1**	**0.8**	**3.3**	**10.8**	**100**

Source: Household Assets and Liability, NSS Report No. 500, 59th Round (January-December 2003).

Annexure Table 1.12: Distribution of Percentage Outstanding Loans by Source of Loan for Each Size Class of Land Possessed by Farmer Households

Size Class of Land Possessed (ha)	Source of Loan								
	Govt.	Co-operative Society	Bank	Agri./Prof es-sional Money Lender	Trader	Relatives & Friends	Doctor, Lawyer andOther Profes-sionals	Others	All
<0.01	1.9	5.3	15.4	47.3	4.0	23.1	1.0	2.0	100.0
0.01-0.040	4.0	14.5	24.8	31.8	4.9	14.9	1.4	3.7	100.0
0.40-1.00	3.8	17.0	32.0	30.8	4.6	9.1	0.7	2.0	100.0
Total Marginal	3.2	12.3	24.1	36.6	4.5	15.7	1.0	2.6	100.0
1.01-2.00	1.7	20.5	35.4	25.9	4.2	8.8	0.8	2.6	100.0
2.01-4.00	1.5	22.6	41.0	23.4	4.7	5.1	0.4	1.4	100.0
4.01-10.00	1.3	23.0	44.5	16.7	6.1	5.6	1.5	1.2	100.0
10.00+	1.7	23.2	42.7	17.2	10.6	4.0	0.0	0.6	100.0
All Sizes	2.5	19.6	35.6	25.7	5.2	8.5	0.9	2.1	100.0

Source: Household Assets and Liability, NSS Report No. 500, 59th Round (January-December 2003).

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