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Why bodhi ?

Bankim Chandra in Dharma-tattwa raised a million dollar question "what we are to do with life; what is to be done ?" (*Jibon loia ki koribo; ki korite hoy*?). This was probably the question which hunted a considerable section of our faculty members. In an untiring pursuit to solve this question, we came to realize that eternal quest for knowledge along with healthy exchange of opinion could be an effective starting point in our journey to the centre of this question. By exerting our freedom of expression and also by articulating our opinion, we may at least make our life more meaningful. This venture requires a platform for clarity of thought. Thus came the idea of *Bodhi*, a journal to be published exclusively by Vivekananda College. Not only the members of our faculty, any free thinker from any part of the globe is at liberty to contribute and express his/her valued opinion. We welcome articles from the experts of different subjects. We firmly believe that active participation of erudite persons shall enable the journal to rise to the pinnacle of glory in near future.

The advent of printing in 15th century Europe raised the human civilization to a majestic climax. Power of the printed word began to dominate the entire world. Pope Alexander VI, apprehensive of the development, warned in papal bull in 1501: "The art of printing is very useful insofaras it furthers the circulation of useful and tested books: but it can be more harmful if it is permitted to widen the influence of pernicious works." By the word 'pernicious', the pope meant any writing 'antagonistic to the Catholic faith.' Centuries have passed since the days of the pope Alexander VI. In many ways, liberalism reigned supreme in the past centuries. Accepting others' views has been accepted fact in our times, although not followed always in the strict sense of the term. But we are determined to follow it. The opinion of the 'other' shall be honoured, but at the same time the right to polemics will not be ignored.

It is the well considered opinion of the faculty members that the journal would be published in three parts--bodhi artham, bodhi vijanan and bodhi kala. The first one will deal with issues relating to finance and economics; the second one shall comprise discussion on science and technology and the third one will include articles on humanities and social sciences. But we are entirely opposed to the idea of rigid compartmentalization. A discourse on the history of science may be published in bodhi kala, or for example, a critique of colonial economy shall well accepted in bodhi artham. Our resources are limited, but our vision is an humble effort on our part to build up a knowledge based society.

That is why ....

Chief Advisor
bodhi

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Can Microinsurance Be Used In Dealing With The Problem Of 'Adverse Selection' In Rural Credit Markets?

Sanjoy Dey*

Abstract: Credit is often thought of as an effective means of breaking the trap of vicious circle of poverty. In spite of the relevance of the aforesaid statement formal baking system shows its unwillingness in the business of rural lending for which they finger at the 'agency problem' which characterizes almost every rural market. This paper analyses how credit linked insurance contract can help MFO/ bank to screen its borrowers and thus get rid of the problem of adverse selection. By 'adverse selection' we mean project related 'adverse selection' problem. Insurance market is also subject to adverse selection problem but the current paper doesn't want to focus on it. Different mechanisms have already been used to tackle this problem. This paper is talking about an alternative mechanism to get rid of the problem of adverse selection. This alternative mechanism utilizes microinsurance as a screening device in rural credit market. The paper doesn't intend to show the importance o f insurance in the life of poor. It treats insurance or rather microinsurance as a screening that banks/MFOs can effectively utilize in their business. Bank- insurance company nexus model is used in this analysis.

INTRODUCTION

Recent researches on rural credit market have particularly concentrated on the issue of asymmetric information in the matter of dealing with the problem regarding disbursement of loan to the rural poor. The problem of imperfect information leads to ' agency problem'. This agency problem arises at two different stages. First problem arises before the contractual arran gements actually take place. This is the 'adverse selection'[1] problem. The second problem arises after the contract is made. This is referred as 'moral hazard'. The problem of 'adverse selection' actually refers to lack of ability on the part of bank to screen its borrowers into 'safe' type and 'risky' type. On the other hand 'moral hazard' refers to fall in effort level of borrowers after the contract is made. Under the presence of this 'agency problem' formal banking sectors find it extremely difficult to enter into rural credit market, particularly when it is operating under the constraint of 'limited liability'[2] This inevitably results in high interest rates, market segmentation and credit rationing[3]. Both academic practitioners and development practitioners have tried to tackle this problem in terms of various mechanisms. The most celebrated mechanism is the method of group lending. The practice of group lending has been carried out in different pockets of the world by different MFOs. It evolved, in particular in Bangladesh (the Grameen Bank method) and in Latin America (solidarity groups and village banking) and then spread out throughout the world. In India this is practiced through Self Help Groups (SHGs). Though the group lending mechanism at different parts of the world has its own distinct features, all have one common element in them and that is 'joint liability'. In fact, this is the founding pillar of group lending mechanism. It implies that if any one of the group members fail to repay loan to the bank other members are jointly responsible for its repayment. The issue of 'joint liability' actually takes help of 'peer pressure' and 'social capital' in mitigating the

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problem of 'adverse selection' and 'moral hazard'[4]. Though group lending is the most celebrated mechanism other methods are also at hand in dealing with 'agency problem'. Progressive lending which uses the issue of dynamic incentive belon gs to the group of other mechanisms[5]. Joint benefit scheme is another example[6] of the set of other alternatives. While different mechanisms are tryin g to make impacts in mitigating the problem arising out of informational asymmetr y and thus easing out the difficulties that formal banking faces while lending to poor, this paper will suggest an alternative mechanism which takes help of a credit linked insurance contract in dealing with the pre contract 'agency problem'.

In the beginning, sole focus of microfinance was on microcredit but now it has started to include other financial services like savings and insurance into its realm. In fact, poor need access to different financial services than just credit. Indeed savings helps a person to build its financial strength. It is used for future consumption, particularly when income is low, as a device of self insurance and for investment purpose. Many MFOs in different regions of the world (like SafeSave in Bangladesh, SEWA in India etc.) have identified the basic instinct of poor for savings and have come with different savings related programme to make an effective use of it. Again, in LDCs poor ru n themselves with lot of socio economic insecurity. They are always vulnerable to events that are b eyond their control. Microinsurence has got a huge role to be played under this circumstance and in recent times a number of MFOs have started to concentrate on this area. Microinsurence actually refers to insurance for poor. It is generally takes the form of a life insurance, health insurance, insurance against loss of asset and bad weather. These insurance schemes are offered by MFOs in different forms. In many cases it is being offered by MFOs along with a savings contract or with a credit contract. Though the current paper doesn't need to specify the type of insurance, it will work with health insurance, a credit linked micro health insurance[7]. The paper doesn't intend to show the importance of a medical insurance for poor. It shows how a bank/MFO can make an effective use of it to get rid of the problem of project related 'adv erse selection'. Actually any insurance contract is also subject to 'agency problem' but we are not focu sing on them. The paper has simply assumed it away. This paper will particularly work with a credit linked health insurance contract and show that banks/MFOs can take help of this sort of contracts to get rid of the problem of project related 'adverse selection' problem and henceforth 'adverse selection' problem because insurance contract, under this set up is free from that kind of problem. Generally, there are two important alternative models of serving poor clients thr ough microhealthinsurance, 'p rovider model' (bank/MFO plays both the role of a lender and of an insurer) and 'linked model' (bank/MFO- insurance company nex us, where bank/MFO plays the role of a lender and insurance company does the role of an insurer and bank collects premium on behalf of insurance company)[8]. In the second model bank places a credit link insurance contract to the client. Bank/MFO collects premium from clients and hand it over to the insurance company where insurance company performs all actuarial calculations. Though the paper will focus on the second model, same result would be obtained if we use the former in stead of the latter model. The model in this paper conceptualizes a hypothetical economic set up where a b ank/MFO offers two credit linked insurance contracts to its poor clients. First contract provides its po or customers a partial insurance coverage against an accident whereas Second contract carries full insurance coverage but charges a higher interest rate relative to the former contr act. If bor rower wants to participate in these two contracts then they need to pay a fixed amount as premium. The premium amount is same in both the contracts and borrowers have to pay this at the start of the contract. Since borrowers are cash constrained they borrow money from bank to pay this premium amount. So, under this set up poor borrowers take loan for two purposes, first to carry out their project and then to pay premium. The model shows that 'safe' borrowers will go for former contract whereas 'risky' borrowers will opt for the second contract. Thus the bank/MFO can screen its borrowers into 'safe' and 'risky' catego ries and thus get rid of the problem of 'adverse selection'.

THE MODEL

The economic environment:

We consider a simple model of one shot interaction in rural credit market with adverse selection. Borrowers are risk averse individuals with utility over income described by the utility function U (.), "U (.)>0, U" (.)<0 and U (0) =0. Borrowers intend to invest in a risky project for which they approach bank for credit. For sake of simplicity let us assume that a typical borrower needs one unit of capital to carry out his projects. Borrowers being devoid of wealth have no option but to approach bank to finance its project. There is no 'moral hazard' and the borrower puts his optimum labour in this project. As has been mentioned earlier, borrower has no wealth and thus he can't offer an y collateral. Again we assume that lender can't enforce an y non- monetary punishment. This means that lenders operate under limited liability constraint. If the project becomes successful it yields a return Y and if it fails then return is 0.

Now, based on probability of success borrowers can be categorized in two groups, 'safe' and 'risky'. Let P_H & P_L be the probability of successes of a 'safe'and 'risky' individual respectively and lender can't distinguish between them. Therefore, $P_i \in \{P_H, P_L\}$ and $0 \leq P_i \leq 1$. Since safe borrowers are more likely to become successful than risky borrowers, $P_H > P_L$. Again, a typical borrower knows its own type, but the lender doesn't. We also assume that each borrower faces an outside independent risk. We can think of this risk being related to health hazard. If a borrower comes sick after he made an investment he incurs an income loss due to treatment. This loss of income affects poor borrower badly. Let λ be the probability of falling ill for a person who is a client of MFO/bank and we assume that λ isn't very high. Again, let Q be the amount of loss that a typical individual incurs when he fall in ill. We assume that lenders in rural markets earn zero profits. In LDCs lender catering to rural markets are either asked by the government to serve with a so cial motive or they themselves want to bring about max imum social welfare. So, the assumption has a strong real ground.

Individual liability lending under the presence of an exogenous risk (a risk of health hazard); in case of no health insurance, a benchmark model:

A typical borrower borrows one unit of capital from the bank which he invests in a one period project. Both the risky and safe borrowers constitute the pool of borrowers. Borrowers are potentially efficient. This means that borrowers on being funded can generate a surplus output, i.e. $P_H > P_L > K$ where K is the cost of per unit of capital for the lending institution. Since lenders lack information about the riskiness of borrower's project, they can't distinguish between safe and risky borrower. Had lender been able to recognize who is who it could have charged two different interest rates to two different types. Unavailability of proper information prevents this to come into its being. As a result of which bank charges a single interest which becomes so high that some creditworthy borrowers have no choice but to move out of the market. This implies market failure since some worthy borrowers are out of the market when efficiency criteria demands that they should be funded. Now borro wers face another risk, the risk of getting ill. Let be the probability of getting ill for the borrower.

Since we assume the lender to earn zero profit, under full information, the zero profit conditions are

$P_H(1-\lambda)R_H + P_H\lambda R_H = K$ .... (1)

Or, $R_H = K/P_H$

and,

$P_L(1-\lambda)R_L + P_H\lambda R_L = K$ .... (2)

Or, $R_L = K/P_H$

Equation (1) and equation (2) represent zero profitability conditions of the lender corresponding to two different borro wers. LHS of the above equations show the expected return of the lender and RHS shows gross cost of raising capital for the lender.

Since, $P_H > P_L$, $R_H < R_L$

That is, risky borrower is charged higher interest so that bank can compensate itself for additional risk involved in the operation. But the problem arises when bank lacks adequate information regarding the riskiness of the borrower. Here bank can't identify who is who. It only knows that some portion of the borrowers, say, λ is safe and thus the remaining portion is risky. Here, lender charges an uniform interest rate R to all its borrowers which is again determined by the zero profitability condition for the lender. The zero profitability condition is written as follows

$[\lambda\{(1-\lambda)PH+\lambda PH\}+(1-\gamma)\{(1-\lambda)PL+\lambda PL\}\bar{R}=K$ ....(3)

Or, $\bar{R}=K/(1-\lambda)[\gamma P_H+(1-\gamma)P_L]$

Since, $P_H>(\gamma P_H+(1-\gamma)P_L)>P_L$

$R_H < \bar{R} < R_L$

This interest rate will be charged to all borrowers. Since this single interest rate considers success probability of both safe and risky borrowers, it is higher than R_H. On the other hand owing to the presence of safe borrowers this rate of interest is lower than R_L. The problem is interest rate may rise so high that safe borrowers are discouraged from applying for loans. This can be shown as follows.

The expected utility of a type i borrower from the participation of a project when the lender operates under full information is given as follows

$U_i^* = (1-\lambda)P_iU_i(Y-R_i)+\lambda P_iU_i(Y-R_i-Q)+(1-P_i)\lambda U_i(-Q)$, $i = L,H$

Here, U_i^* is the expected utility of type i borrower. Q is the monetary loss on account of health hazard. On the other hand let U_i^c be the expected utility of type i borrower under market failure where

$$U_i^c = (1-\lambda)P_iU_i(Y-\bar{R})+\lambda P_iU_i(Y-\bar{R}-Q)+(1-P_i)\lambda U_i(-Q),\ i = L,H$$

It is obvious from our earlier discussion that $U_L^c > U_L^*$ and $U_H^* > U_H^c$. Since the bank lack any effective device which enables it to separate their borrowers in accordance with their default probabilities, the safe borrowers are discriminated against. If the reservation levels of utility for safe and risky borrowers are $\bar{U}_H$ and $\bar{U}_L$ respectively, such that $\bar{U}_H^* > \bar{U}_H$ and $\bar{U}_L^* > \bar{U}_L$, then both types are worthy borrowers whose projects would be funded under complete information.But under incomplete information it can easily be the case that $U_H^c < \bar{U}_H$ driving the safe borrowers out of the market and shooting up interest rate further. This is the adverse selection problem that often characterizes the rural credit market. This can easily presented in a diagrammatic way like follow

Figure (1) is the diagrammatic version of the aforesaid discussion. U_i^* is a downward falling curve when it is plotted against interest rate. At $\bar{R}$, $(U_{Safe}{}^*$ is lower than $\bar{U}_{Safe}$ and thus all safe borrowers go out of the market. In what follows a way out of this problem has been tried to be given.

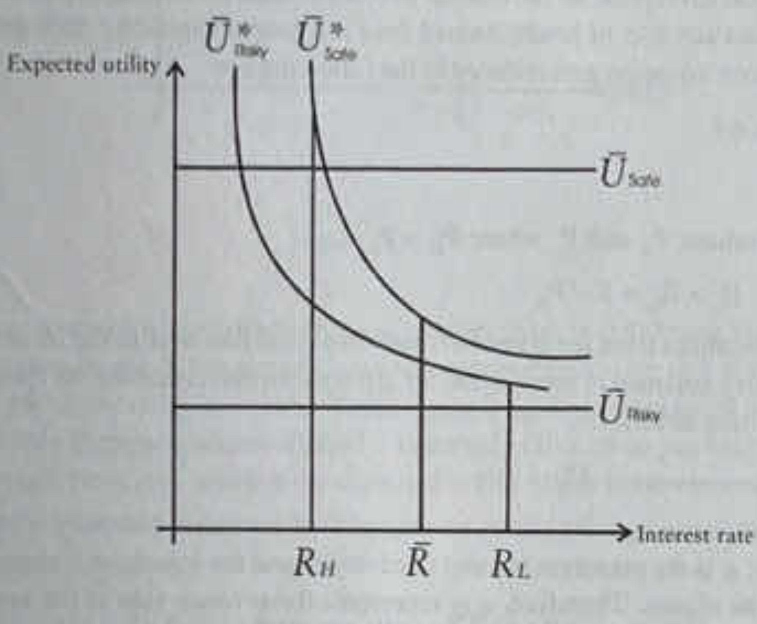

Figure (1)

Individual lending with two alternative contracts; a credit linked insurance contract and a simple credit contract:

Here, in this current hypothetical set up bank/MFO places two types of credit linked insurance contracts to its prospective customers, a partial coverage, low interest rate contract and a full coverage, high interest rate contract. As has already been said the model will work with a bank insurance company nexus model. Borrowers need to pay a fixed amount of premium, say $\in$, to access these credit link insurance contracts. The contract in turn provides coverage of amounts σ to its clients. Under partial coverage scheme σ is less than Q, the monetary loss of accident whereas under the full insurance scheme $\sigma = Q$. The borrower borrows one unit of money from the bank and he needs to pay R gross rate of interest to the bank. The borrower being poor has no option but to borrow an extra amount of money that he pays to the bank as premium. Therefore, the borrower borrows an amount of $(1+\in\sigma)$ from the bank and thus pays $R(1+\in\sigma)$ as rate of interest to the bank. Here, we are assuming that the bank operates in a competitive set up and is committed to break even. By making such an assumption we are avoiding problems emerging out of imperfect competition. Under this sort of competitive framework bank will try to cover its cost, K, per unit lent. This K includes cost of raising money for every rupee lent and the transaction cost of banking operation. With every rupee lent if bank also lends the premium amount then the effective cost of loan to bank is $K(1+\in\sigma)$. Therefore, the condition of breaking even implies,

$$P_i\lambda R(1+\in\sigma)+P_i(1-\lambda)R(1+\in\sigma)=K(1+\in\sigma) \qquad \text{.............................(4)}$$

LHS of the above equation represents the expected return of bank on lending of one unit capital. Since borrowers are insured against any sort of health hazard their repayment capability does gethampered if they suffer from illness. The above equation gets reduced to the following one

$P_iR(1+\in\sigma)=K(1+\in\sigma)$

Or, $P_iR=K$

Or, $R=K/P_i$

Now, P_i takes two values, P_H and P_L where $P_H > P_L$

Therefore, $R_L = K / P_L > R_H = K / P_H$

Bank collects this premium from the borrowers and then hand that over to the insurance company which is also assumed to break even. So, the equilibrium condition the insurance company can be written as follows,

$$\in\sigma = \lambda\sigma \qquad \text{..................................(5)}$$

Left hand side of the above equality shows revenue side of insurance company where right hand side shows expected cost. Now, $\in$ is the premium per unit of coverage and the insurance company provides σ amount of health coverage to its clients. Therefore, $\in\sigma$ represents the revenue side of the insurance company. On the other side λ is the probability of illness. So, $\lambda\sigma$ is the expected cost of insurance to the insurance company on σ amount of health coverage. The above equality boils down to the following equality,

$\in\sigma = l(9)$

Since, lender and insurer are different parties rate of interest charged by the MFO/bank doesn't depend on the coverage provided by the insurer and vice versa. Therefore, if we plot R on vertical axis and σ on horizontal axis we get the following diagram

Here bank offers two contracts, represented by point A and B. One contract provides a partial coverage and charges a lower interest rate and another contract provides a full coverage and also charges a higher interest rate. Point A depicts the former contract whereas point B refers to the latter contract.

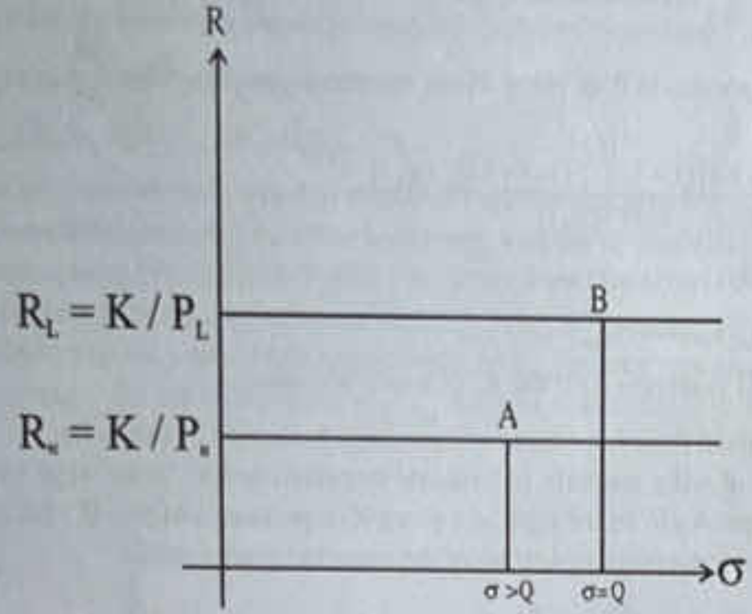

Figure (3)

Now, we need to analyze preference of the borrower to see whether these two different kinds of contracts can help bank to screen borrowers or not. It has already been said that borrowers are risk averse individuals and we also assume that they are highly risk averse individuals. Again it has been mentioned that l is not very high and this is because if l is very high then borrowers find it extremely difficult to pay high premium since the lender offers a fair insurance. Now let's analyze the expected utility of the borrower since outcomes are all probabilistic in nature.

Expected utility of a borrower is given by

$$EU_i = P_i\{(1-\lambda_i)U_i(Y-R(1+\epsilon\sigma)+\lambda_i Ui(Y-R(1+\epsilon\sigma)+\sigma-Q)\}+(1-P_i)\lambda U_i(\sigma-Q) \ldots\ldots (6)$$

If the borrower falls ill he gets coverage from the insurance company. It doesn't depend on whether the project becomes successful or not.

To, analyse preference of the respective borrower we will recourse to indifference curve analysis. On the IC expected utility level is held constant.

i.e. $dEU_i = 0$
and therefore,

$$\frac{dR}{d\sigma} = -\frac{EU\sigma}{EU_R} > 0 \text{ since } EU_R < 0 \text{ and } EU\sigma > 0$$

the above expression[10] i.e. $\frac{dR}{d\sigma}$ represents the slope of indifference curve and it is positive. i.e, IC in this case is upward rising when it is plotted in R-σ plane. Now, the detail expression for $\frac{dR}{d\sigma}$ is as follows

$$\frac{dR}{d\sigma} = \frac{(1/P_i - 1)\lambda U_i'(x_2) - \varepsilon R\{(1-\lambda)U_i'(x_1) + \lambda U_i'(x_2)\}}{(1+\varepsilon\sigma)\{(1-\lambda)U_i'(x_2)\}}$$

Where, x_1=Y-R(1+$\varepsilon\sigma$), x_2=Y-R(1+$\varepsilon\sigma$)+σ-Q and x_3= σ-Q

Now, since $R_H > P_L$, $(dR/d\sigma)_{Risky} > (dR/d\sigma)_{safe}$

i.e., IC of a risky individual is steeper than the IC of a safe borrower.

On being plotted in R- σ plane ICs of two types of borrowers look like the following,
URisky and Usafe are ICs of risky and safe individuals respectively and 'risky' type has a steeper IC compared to the IC of 'safe' type. An IC to the right of a given IC represents a higher IC. So, rightward movement of the given IC entails an improvement in welfare of the concerned individual.

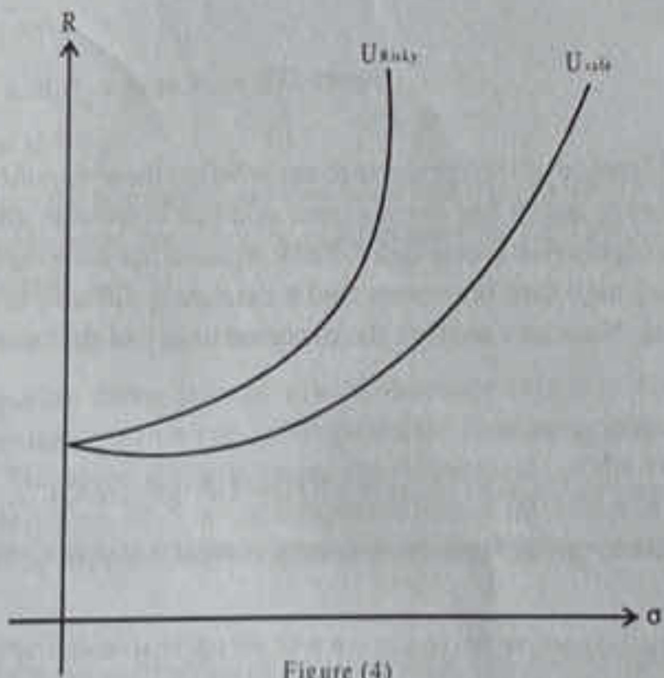

Figure (4)

Proposition : If the bank/MFO offers two credits linked insurance contracts, a partial insurance coverage with low interest rate and a full insurance coverage with high interest rate, a safe borrower will choose the 1st contract where the risky borrower will opt for the latter contract.

Proof: Suppose (R_H , σ_H) and (R_L . σ_L) are the equilibrium values R and σ for safe and risky borrowers respectively. At equilibrium the following incentive compatibility conditions have to be maintained.

$$EU_{safe}(R_H,\sigma_H) \geq EU_{safe}(R_L,\sigma_L)$$

$$EU_{risky}(R_L,\sigma_L) \geq EU_{risky}(R_H,\sigma_H) \quad \text{.........................(3)}$$

The above expressions are quite obvious and thus they don't require any proof of their validity. Now, we will be trying to analyse the equilibrium positions of the borrowers with the help of thefollowing diagram. Actually here we have superimposed Figure (4) on Figure (3).

Figure (5) shows equilibrium positions of two borrowers. E_{Risky} (R_L, σ_L) and E_{Safe} (R_H, σ_H) are the equilibrium positions of safe individual and risky individual respectively. At E_{Safe} interest rate charged is R_H and this carries a partial insurance coverage. On the other hand at E_{Risky} interest rate charged is R_L and this carries a full

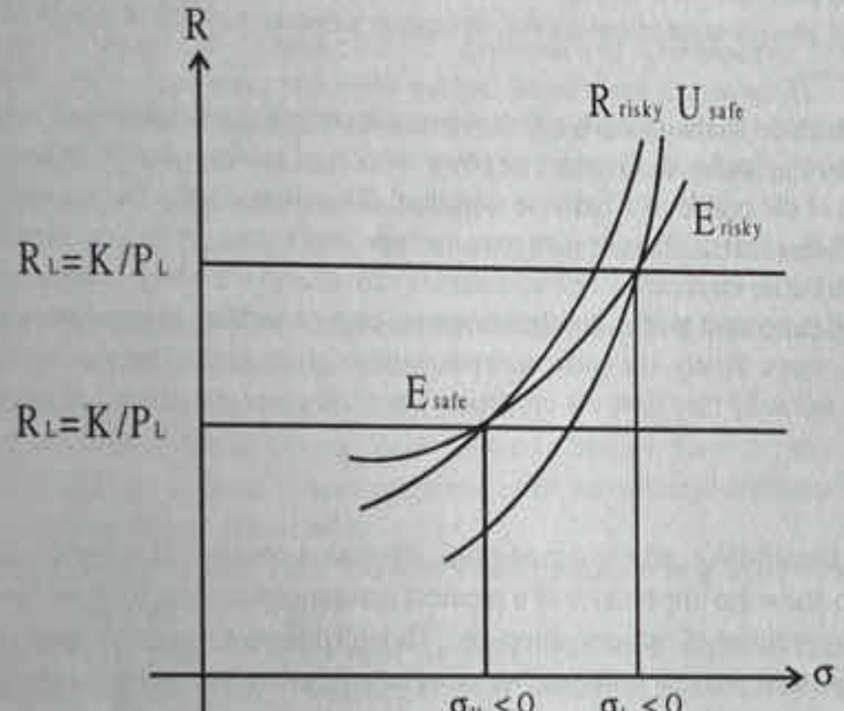

Figure (5)

insurance coverage, σ_L=Q. Here, $R_L > R_H$. The safe borrower is indifferent between two contracts but ultimately it will settle down with the (partial coverage, low interest rate) contract. On the other hand a risky borrower will go for (full coverage, high interest rate) contract. Actually full insurance contract maximizes the utility of the risky borrower and it strictly prefers equilibrium position, E_{Risky} to E_{Safe}. Since any leftward movement of the IC entails attainment of a lower IC, it will never move to E_{Safe}. It shows that if bank/MFO offers two contracts, a partial insurance coverage with low interest rate, (σ_H, R_H) and a full insurance coverage with high interest rate contract, (σ_L, R_L), a safe borrower will go for the former contract where a risky borrower will choose the second contract and hence we prove the above proposition[11].

Now, we face the problem of rationalizing the above result with economic logic. The above result seems very plausible if we assume that a poor person can meet his medical expenditure if his project comes out as 'success' and the project generates a flow of income throughout the year. This assumption has a strong realistic ground. Govt. of many LDCs provides subsidised medical treatment to its poor people. So, an individual who highly expects to earn a flow of income in future can cover majority of his expenditure by his own. Therefore, a safe borrower who puts a good effort into his business expects his project to become successful with a high probability compared to a risky individual who puts a low effort and thus won't be ready to pay a higher interest rate for full coverage and this way he also avoids the necessary extra borrowing for paying higher sum of money to the bank/MFO. On the other hand a risky individual who is not very sure about his future income level will always want to have a full insurance coveragesince this would be helpful to meet future health contingencies.

This mechanism is definitely economically efficient because under this mechanism all potentially efficient borrowers are funded by the lender and lender can cover its cost of raising capital. In fact this mechanism helps a lender to get rid of the problem of 'adverse selection'. Therefore it helps the economy to operate in a first best scenario and thus a Pareto improvement over the benchmark case. In fact an improvement of social welfare happens here. In the no insurance case banks used to earn zero profit which is same here. Additionally insurance company also earns zero profit. But the borrowers enjoy a welfare improvement under this set up and this happens in two ways. Firstly, the borrowers who were excluded in the previous set up now have an access to the credit and secondly they have the opportunity to get insured, partial or full against future health contingencies.

CONCLUSION

The paper shows that bank/MFO can use a credit link insurance contract to screen its borrowers. The paper doesn't intend to show the importance of a medical insurance for poor. It shows how a bank/MFO can use it to get rid of the problem of 'adverse selection'. Though different mechanisms are at hand to tackle the credit related pre contract 'Agency Problem' we propose an alternative mechanism to tackle that. I will like to enquire into the post contract 'Agency Problem' and try to see whether a microinsurance can become helpful to get rid of that problem or not.

NOTES

1. See Stiglitz and Weiss (1981) for a number of models on 'adverse selection'
2. For detail analysis on 'limited liability', see Aghion and Morduch (2005)

3. See Hoff and Stiglitz (1990) for a review of the recent theoretical and empirical literature
4. M.Ghatak and T.W.Guinnane (1999) analyses the group lending mechanism in mitigating agency problem.
5. For a discussion on alternative models that belong to the group of 'other mechanisms' see Aghion and Morduch (2005).
6. See S.Bhattacharaya, S.Banerjee & S.Mukherjee (2008) for a discussion on 'joint benefit' scheme.
7. See R.Ahuja and J.Jütting (2008), P.Gertler, D.I.Levine and E.Mo retti (2003) & A.S.Rai and S.Ravi (2008) for a discussion on micro health insurance
8. For a detail discussion on alternative models see P.R.Sodani (2008), R.Readermacher and I.Dror (2006).
9. If this condition holds then we call it a fair insurance
10. Derivation of the expressions of $\frac{dR}{d\sigma}$, EUR and $EU\sigma$ & their signs are given in Appendix
11. Same result would be obtained if we use 'provider model' where ban/MFO plays both the role of a lender and of an insurer.

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Appendix

$EUi = P_i[(1-\lambda)U_i(Y-R(1+\varepsilon\sigma)+\lambda U_i(Y-R(1+\varepsilon\sigma)+\sigma-Q)]+(1-P_i)\lambda U_i(\sigma-Q)$

Now, we want to find out the slope of the ICs corresponding to the aforesaid expected utility function i.e. $\frac{dR}{d\sigma}$.

Again, $\frac{dR}{d\sigma} = \frac{EU_\sigma}{EU_R}$

Let us derive the mathematical expression of s EU_R and $EU\sigma$ and their sign To do that let us first define,

$x_1 = Y-R(1+\varepsilon\sigma)$, $x_2 = Y-R(1+\varepsilon\sigma)+\sigma-Q$, $x3=\sigma-Q$

Now, $x_1 > x_2 > x_3$ and therefore U_i '(x1) < U_i '(x2) < U_i'(x3) since Ui (.) < 0

$EU_R = -\{P_i(1-\lambda)U_i'(x_1)(1+\varepsilon\sigma)+Pi\lambda U_i'(x_2)(1+\varepsilon\sigma)\}$

$= -(1+\varepsilon\sigma)P_i\{(1-\lambda)U_i'(x1)+\lambda U_i'(x_2)\}<0$

$EU\sigma = P_i(1-\lambda)U_i'(x_1)(-R\varepsilon)+P_i\lambda U_i'(x_2)(1-R\varepsilon)+(1-Pi)\lambda U_i(x_3)$

$= (R\varepsilon)P_i\{(1-\lambda)U_i'(x1)+\lambda U_i'(x_2)\}+\lambda\{P_iU_i'(x_2)+(1-P_i)U_i'(x_3)\}$

$= (-R\lambda)P_i\{(1-\lambda)U_i'(x1)+\lambda U_i'(x_2)\}+\lambda\{P_iU_i'(x_2)+(1-P_i)U_i'(x_3)\}$

since $\varepsilon=\lambda$ from the Zero profitable condition of the insurance company Now, we assume that $R\varepsilon<1$ or $R\lambda<1$. This is compatiable with the assumption that λ isn't very high

Now, $R\lambda<1$ therefore, $-R\lambda>-1$

Therefore,

$EU\sigma = (-R\lambda)P_i\{(1-\lambda)U_i'(x1)+\lambda U_i'(x_2)+(1-P_i)U_i(x_3)\}$

$> (-P_i)\{(1-\lambda)U_i'(x_1)+\lambda U_i'(x_2)\}+\lambda\{P_iU_i'(x_2)+(1-P_i)U_i'(x_3)\}$

$= \lambda(1-P_i)U_i'(x_3)-P_i(1-\lambda)U_i'(x_1)$ and this is positive provided the following statement holds

The expected marginal utility from extra money income when his project succeeds and he doesn't get ill is less than the expected marginal utility from extra money income when his project fails and he suffer from illness. Given that lisn't very high this happens when borrowers are sufficiently risk averse individuals.

In fact, this happens even under full coverage,

i.e. for $\sigma=Q$,

$\lambda(1-P_i)U_i'(0)-P_i(1-\lambda)U_i'(x_1)>0$.

Now, consider $EU\sigma\sigma$

$$EU\sigma\sigma = P_i(1-\lambda)U_i''(x_1)(R\lambda)^2+P_i\lambda U_i''(x_2)(1-R\lambda)^2+(1-P_i)\lambda U_i''(x_3)<0$$

Therefore, if EU_i is positive for $\sigma = Q$ then it is true for all $\sigma < Q$ because $EU\sigma\sigma < 0$

Therefore, $EU_R < 0$ and $EU\sigma > 0$

and thus $\frac{dR}{d\sigma} > 0$

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Second Green Revolution Through System of Rice Intensification (SRI)

Atanu Thakur*

"We need a Second Green Revolution. We need new technologies, new organizational structures, new institutional responses and, above all, a new compact between farmers, technologists, scientists, administrators, businessmen, bankers and consumers. The global community and global agencies must fashion a collective response that leads to a quantum leap in agricultural productivity and output so that the spectre of food shortages is banished from the horizon once again."

Dr. Manmohan Singh, Prime Minister of India

In Global Agro Industries Forum in New Delhi on April 10, 2008

INTRODUCTION

In the emerging global food crisis scenario the statement made by honorouable prime minister is very critical no doubt. He rightly captures the need of the hour—an all round effort to increase agricultural productivity so that we can evade the global food crisis. It is true that if there is a global food crisis then India cannot by pass that crisis. Now in India rice constitute the major portion of our food basket particularly for the poor Indians. Food crisis definitely hits the poor most and so to evade this it is necessary to intervene at least in rice sector immediately. As PM rightly pointed that it needs an all round effort, the intervention should consider all the factors like finance, crop insurance, marketing and many other factors directly or indirectly related to agricultural production because to make an impact in a particular agricultural practices all factors are equally important. One major intervention in rice production is through introducing System of Rice Intensification popularly known as SRI—a new package of practices that proves its potentiality regarding increasing production. But before going to that it is, we think, necessary to take a stock of Indian situation regarding production of rice, as rice is the most important cereal food crop of India. In the next section (Section-I) we try to present the current scenario regarding rice production for India. It occupies about 23.3% of gross cropped area of the country. It contributes to 43% of total food grain production and 46% of the total cereal production of the country. Among the rice growing countries in the world, India has the largest area under rice crop and ranks second in production next to China.

In India, rice cultivation is irrigated and/or supplemented by rainfed production. Of the approximately 45 million hectares under rice cultivation in the country, around 22.5 million hectares are irrigated.

The second thing, which is important for us, is the type of intervention. Though PM argues strongly for second Green Revolution but whether he means to replicate the first green revolution type of intervention or he just means to increase the rice production. If it is the former then the question is whether is it possible to replicate green revolution nowadays specifically after globalization. Though it is true that green revolution increases production tremendously but it faces

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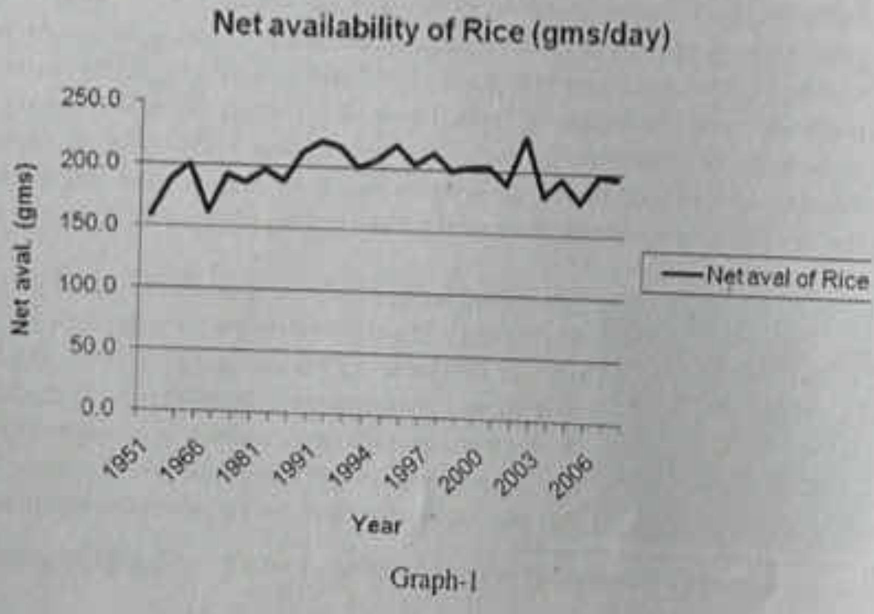
many criticisms from different corners. The most important among those are the technology is very costly that means inappropriate for the poor farmers. Another important criticism against green revolution is that the success depends heavily on the huge use of chemical fertilizer. It has two consequences: first it reduces the soil fertility in the long run and secondly it has a negative effect on environment. So the green revolution is also faced a criticism from the environmentalists and also from the economists who are the champion of sustainable development. According to them green revolution is not so 'green' in its ultimate outcome. In this paper we try to find out a definite alternative—System of Rice Intensification (SRI). SRI as an alternative technology definitely proves that it has potentiality to increase production as well as reducing cost. In section-II we like to analyze the salient features of SRI. Though it proves itself as one of the best alternative but the question is the process of implementation—who will shoulder the responsibility for implementation. The task is huge and government alone is not capable of doing this. Honorable Prime Minister rightly pointed out that new institutional response is necessary. Not only that a more complex-compact approach is necessary which is capable of addressing not only the sector specific intervention but also other aspects which contribute significantly in that particular intervention like finance, training etc. In Section-III I like to present the Indian scenario regarding SRI. In the last section I will concentrate on West Bengal situation regarding SRI.

Section-I

IS INDIA VERGING TOWARDS FOOD CRISIS: A BACKDROP

According to Economic Survey 2007-08 'the consumption of cereals declined from a peak of 468 grams per capita per day in 1990-91 to 412 grams per capita per day in 2005-06, indicating a decline of 13 percent during this period'. Net availability of rice is also showing a declined trend, though it is higher compared to 1951 (Graph-1).



Graph-1

The net rice availability (gms/day) remains in an around 200 gms/ day for the period 1990 to 2000. In 2001 it decreased but it reached its highest at 228 gms/day in 2002. After that it is falling continuously. Now there might be two reasons first the growth of population is higher than that of the growth of rice production and secondly production of rice is also coming down. Average GDP growth rate in agriculture is declining (Table-1).

Table-1

Average GDP Growth Rate in Agriculture

Period	Agriculture and allied Services
Pre-Green Revolution 1951-52 to 1967-68	2.54
Green Revolution period 1968-69 to 1980-81	2.44
Wider technology dissemination period 1981-82 to 1990-91	3.52
Early reforms period 1991-92 to 1996-97	3.66
Ninth Plan 1997-98 to 2001-02	2.50
Tenth Plan 2002-03 to 2006-07	2.47

Source: Eleventh Plan

So all these show that agricultural production is reached its plateau and production becomes stagnant at a particular level. Something like green revolution is the need of the hour otherwise we can't evade a sever food crisis. The Steering Group for eleventh plan identifies some very critical factors which influence the agricultural growth and the group also ranks those factors according to the importance. A quick look to all those factors makes it clear that the agricultural growth is slowing down very fast (Table-2). According to the report (Eleventh Plan) technological change (using yield potential of varieties of major crops released by the National Agricultural Research System (NARS) as a proxy), public investment (including investment on irrigation) and diversification (represented by area under fruits and vegetables) are the most important determinant of growth. All these three factors is declining starting from 1980-81 and in case of technology no growth has been taken place during 1996-97 to 2005-06 (Table-2). Not only that the terms of trade is against agriculture (-1.69) during 1996-97 to 2005-06. According to eleventh plan document this is the first time after independence when terms of trade is against agriculture when production is also declining.

Table-2

Trend Growth Rate of Different Factors in Agriculture—1980-81 to 2005-06

Factors	1980-81 to 1990-91	1990-91 to 1996-97	1996-97 to 2005-06
Technology#	3.3	2.81	0.00
Public Sector net fixed capital stock	3.86	1.92	1.42*
Gross Irrigated Area	2.28	2.62	0.51*
Electricity consumed in agriculture	14.07	9.44	-0.53@
Area under fruits and vegetables	5.60	5.60	2.71@
Private sector net fixed capital	0.56	2.17	1.17*
Terms of Trade	0.19	0.95	-1.69*
Total net fixed capital stock	2	2.06	1.28*
NPK use	8.17	2.45	2.30
Credit supply	3.72	7.51	14.37*
Total cropped area	0.43	0.43	-0.10
Net sown area	-0.08	0.04	-0.22
Cropping intensity	0.51	0.39	0.12

Yield potential of new varieties released of paddy, rapeseed/mustered, groundnut, wheat, maize and cotton.

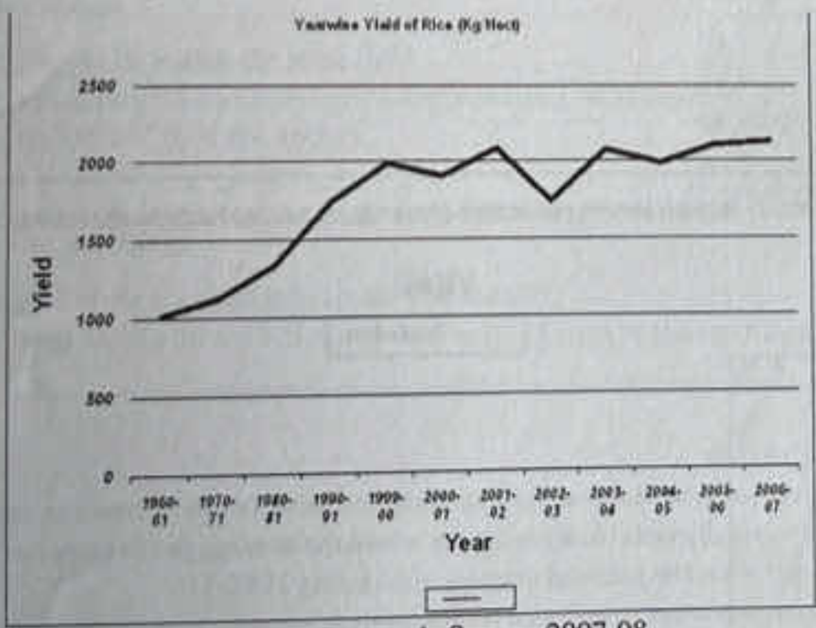
*Upto 2003-04; @ Upto 2004-05

In South Asia, remains of rice have been found in Lothal (2300 BC) and Rangpur (2000-1800 BC), both, interestingly, dry areas in the modern Indian State of Gujarat. Rice in wetter locations is what is today Bihar and West Bengal in eastern India dates to the same period.

Total cropped area as well as net sown area is coming down. Total net fixed capital stock is depleting very fast. Use of huge NPK is one of the major interventions of green revolution technology and the success of it highly depends on this. The use of NPK is heavily coming down from 8.17 to 2.30. There are many reasons for this fall. One of these are the fact that the productivity of the land comes down very fast so to have same yield it is necessary to use more and more NPK. Only positive thing is the supply of credit to the sector. It is better from a particular angle but when a sector is facing against terms of trade then it needs more in depth study through which it can be found for which this loans are used and that is crucial for the growth of the sector. So this table actually raises many questions and surely it is not giving us a very bright picture. The rice as one and most important component of Indian agriculture is also facing the same problem.

The productivity of rice in India is comparatively higher when compared with some of the South Asian countries like Thailand, Pakistan, Bangladesh and Nepal. However it ranks much below when compared with the productivity of countries like Japan, China, Korea, U.S.A. and Indonesia. The average rice productivity in India during 1999-2000 was 1986 kg/ha, which is about 23% below the world average productivity of 2563 kg/ha during the corresponding year.

There has been considerable increase in productivity of rice in India during the past fifty years. The productivity of rice, increased from 1013 kg/ha in 1960-61 to around 2,079 kg/ha during 2001-02 (Economic Survey of India, 2007-08). This means there is 105% increase in yield implies it is more than doubled. The increase in productivity of rice has been possible due to introduction of high yielding rice varieties, high dose of fertilizers (chemical) coupled with improved package of practices which green revolution brings in. But interestingly just in the next year there is a fall in productivity (Graph-2).



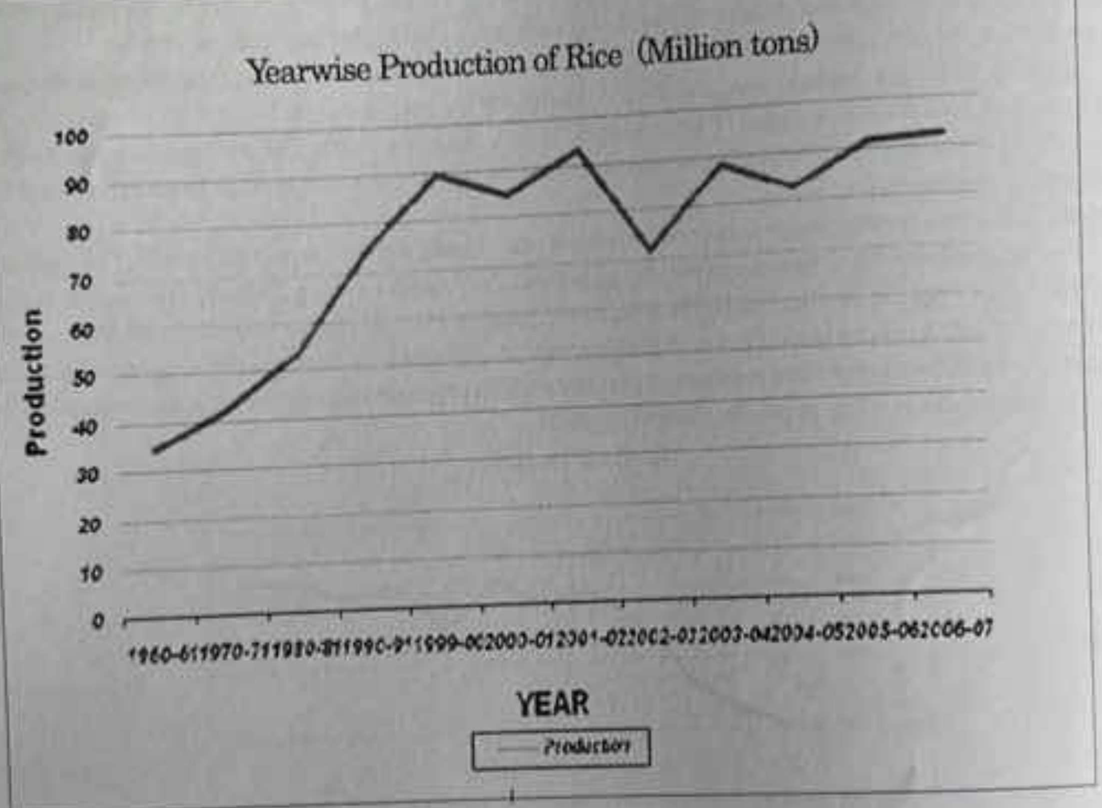
Source: Economic Survey, 2007-08

Graph-2

the productivity is 2127 Kg/Ha in 2006-07 and compared to 2001-02 the increase is only 2.3% that means productivity reaches a plateau.

The total production has increased during the corresponding year by nearly 169% from 34.6 million tonnes in 1960-61 to nearly 93.3 million tonnes during 2001-02. But after that there is a decline in production in the next year due to the fall in productivity (Graph-3). After that it catches the earlier growth path but not fully and the production is 92.7 million tones in 2006-07 which is less than that of in 2001-02. It clearly indicates that the available technology mainly dominated by the green revolution technology is not capable of increasing production further.

Graph-3



Source : Economic Survey, 2007-08

With this it should be kept in mind that there is interstate and intrastate difference in production as well as productivity of rice. There are districts (four) in Orissa where the average per hectare rice production during 1999-2000 was lower than what the national average was during 1950-51.

However, there are still certain areas, where rice productivity is extremely low. The productivity is affected by factors like soil type, soil fertility, rainfall pattern, flood, water logging, climatic conditions etc.

In India, rice is grown under varying eco-system, varying soils conditions, varying climatic and hydrological conditions. This factors range from waterlogged and poorly drained situations as well as from rain-fed to irrigated conditions. Rice is today grown in 534 districts spread across 30 States and Union Territories. In spite of the increase in yield that has been the contribution of the green revolution the growth in yield seems to have tapered and has almost reached its plateau. Increase in cost of inputs also have added further burden to the farmers. The terms of trade is negative means against agriculture and the flow of credit is increasing—from these two it is easy to conclude that farmers are unable to meet the increasing cost of production just by selling the marketable surplus.

From the above analysis it becomes clear that the need of the hour is a technology, which can increase production as well as decrease cost of production. SRI as new package of practices is capable of doing these two things at the same time. In the next section we are going to take a quick look about SRI.

Section-II

WHAT IS SRI?

SRI is a new package of practices for cultivation. A priest Fr. Henri de Laulanié, S.J. first practiced the SRI technology in Madagascar. Though it was started earlier but the first paper was published in 1987 where all the steps for SRI implementation are documented. That paper is still used as the basic guideline.

The basic Tenets of SRI:

The basic principles of SRI are the following:

Nursery Bed Preparation:

- Nursery bed should be within the same field.
- This involves paddling the soil and digging a trench along two sides thereby raising the bed by a few inches.

Transplanting the seedling:

- **No uprooting:** Taking out seedlings along with the soil
- **Young Seedling:** Doing the transplanting within 12-15 days of the seedlings age.

Spacing sowing:

- Maintaining a spacing of 25 cms. between two seedlings.

Single seedling:

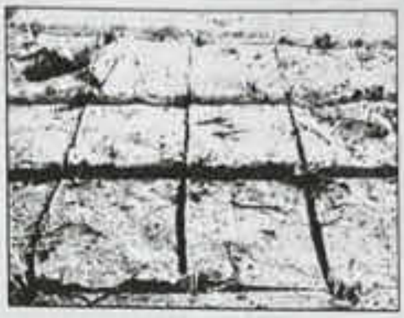
- One seedling per hill

Regular weeding:

- First weeding should after 8-10 days after transplanting.
- At least three weeding is necessary.

- Weeding can be done rotary hoeing or cono weeder (Picture-5). Using of these types of weeder will give the best possible result. But at the same time it is true that some constraints are still there regarding using of those types of weeder though governments and also different agriculture universities are trying their best to make it available to every one. Firstly it is still unavailable to many of the farmers. Secondly poor farmers sometimes are not in a position to afford the price. In that case they are using the home made weeder (Picture-6) and that is giving a first best or at least second best result.

Alternate Wetting And Drying:



- Irrigation should be done with minimum water.
- There should be no standing water after transplanting.
- Alternate drying and wetting
- At the tillering period there should be 1-2cm standing water in morning and that should be drained out in the afternoon.

After the successful implementation in Madagaskar it was also popularised in other countries from all over the world by different organization.

System of Rice Intensification- The Method

In SRI method of rice cultivation seedlings are raised in such a way that they can be transplanted along with the seedbed soil without disturbing the root system. 8-12 days old seedlings are transplanted to the main field in order to tap the maximum tillering potential. In rice, each tiller produces another tiller two phyllochrons later. A phyllochron is an interval of plant growth usually about 5 days but it can be longer or shorter depending on varieties, temperature, depth of transplanting and soil conditions. When the soil and other conditions are favorable rice plant can go through as many as 12 phyllochrons before it moves from vegetative phase to reproductive phase. The number of tillers can increase exponentially with as many as 84 or more from a single plant. Transplanting after 4th phyllochron sets back the growth momentum of the rice plants so that their full potential of producing tillers, roots and grains are not achieved. If 10th the 12th phyllochron is not materialized because of late transplanting about 75% of tillering potential is lost. Single seedling per hill is recommended. Seedlings should be transplanted within 15-30 minutes after removing from the seedbed to avoid any kind of shock. A spacing of 25 cm X 25 cm or more is provided to create better micro-environment for higher number of tillers. Sufficient FYM to the tune of 10 t/ha should be applied to make the soil rich in organic matter. Frequent mechanical weeding is recommended. The first weeding should be followed after 10-12 days of transplanting. No chemical weeding is recommended. Against the traditional wisdom, only alternate wetting and drying is followed to create an aerobic condition at the root zone. A sub-saturated to saturated soil-water environment is preferred. This helps in channeling the energy required to create aerenchyma (air pockets) in the roots under anaerobic conditions to better productivity.

SRI method has the following advantages:

- Plants get proper environment to grow at an appropriate stage resulting in more number of productive tillers and synchronous flowering.

- Since 8-12 days old seedlings are planted, main field leveling becomes a necessity. Proper leveling helps in water saving and better use of other inputs.
- It helps in maintaining adequate plant population per unit area.
- Timely weeding with cono- weeder makes more nutrients available to plants.
- Proper spacing allows more sun light and aeration to the lower leaves, making them active for a longer period.
- This results in sturdy stem, active leaves, more number of filled grains per panicle and more grain weight.
- With proper sun light and aeration, micro-climate is not formed which helps in minimizing incidence of insect-pests and pathogens.
- SRI can increase both land and labour productivity compared to conventional practice.
- An average paddy yield of 8-9 tons per hectare is possible with high yielding varieties.
- Mechanical weeding adds about 2 t/ha weed- bio-mass during the whole crop season thereby improves the soil health.
- The cost of seeds is reduced drastically because only about 2.0 kg of seeds per acre is required in this method.
- It is a good method for organic farming as high-yield can be achieved by green manuring and compost application.
- Total water requirement for rice production is also reduced as continuous submergence is not needed.
- With large number of tillers the rice- bio-mass is also increased. Rice straw has multiple uses to the farming families.
- It is a very valuable alternative for small farmers with limited land endowment.

SRI is essentially an irrigated rice technology wherein the farmers need absolute control over the water. Agronomic practices and water management aspects take over other issues. Early management in this method is crucial. It is considered to be low external inputs method but labour intensive till the farmers become experienced. It is more a framework of resource management rather than a technology.

Table: Comparison of SRI with Traditional Method of rice cultivation

Operation	SRI Method	Traditional Method
Nursery Preparation	Nursery bed should be nearer to the main field. About 5 kg/ha seed is sown in the seed bed. Chemical fertilizers are not recommended.	Nursery bed is not necessarily prepared near the main field. About 30 kg/ha or more seeds are used
Main field preparation	Careful plowing, puddling, leveling, raking is done. Thirty cm wide channels are made at an interval of 2-meter across the field to drain excess water.	No cross drain is made as inundation is encouraged and drainage is not a priority.
Transplanting	Eight-ten day old seedlings are transplanted singly soon after they have two leaves and at least below 15 days after sowing. The seedlings must be transplanted with their roots intact while the seed sac remains attached. They must not be plunged too deep and placed at on the ground at appropriate point on the planting grid. Square pattern of planting grid is preferred to facilitate weeding. Transplanting should be done quickly after gently removing seedling from the nursery. The root should not dry. Seedlings remain green and establish early.	About 25 day old or more seedlings are transplanted. 5-6 nos. of seedlings per hill are used. Seedlings are uprooted from the nursery; the nursery bed soil is removed from the root zone before binding and transporting to the main field. Seedlings are generally not transplanted as quickly as in SRI method. Random planting is preferred. Seedlings generally turn yellow and take about a week to establish.
Spacing	Seedling should be planted precisely at a spacing of 25 cm X 25 cm or more depending upon the tillering capacity of the variety. About 16 to 20 hills per m^2 is maintained.	Usually 20x15 cm spacing is maintained.
Soil Nutrient	SRI is promoted as an organic culture. This promotes proper microbial activity in the soil. Farmers who do not have sufficient organic matter may use less amount of chemical fertilizer.	Farmers generally do not apply balanced nutrients to soil. Farmers are prone to use more nitrogenous fertilizers and give less emphasis on organic manures.
Watering	SRI requires root zone to be kept moist, not submerged. Water application can be intermittent.	Inundation is preferred. Standing water helps in weed suppression thereby eliminate weeding.

Operation	SRI Method	Traditional Method
Weeding	Since there is no standing water in the field, weeds tend to proliferate hence requires frequent weeding. First weeding should be done 10-12 days after transplanting. Further weedings are required at an interval of 10-12 days. Weed bio-mass is generally mixed with the soil with weeder (Cono weeder) which enhances organic matter in the soil.	Limited weed growth and random planting does not warrant mechanical weeding. Sometimes manual weeding is done which does not churn the soil.

From the above comparison it becomes clear that SRI helps farmers to cut the cost in different fronts. The seed requirment is lower than that of in traditional technology and that leads a cost savings. The most important in this regard is the use of water. In India most of the farmers incur a sizable expenditure for water. In SRI as water requirment is drastically low and there is a possibility of re-use of water so farmers can save a huge amount here.

Section-III

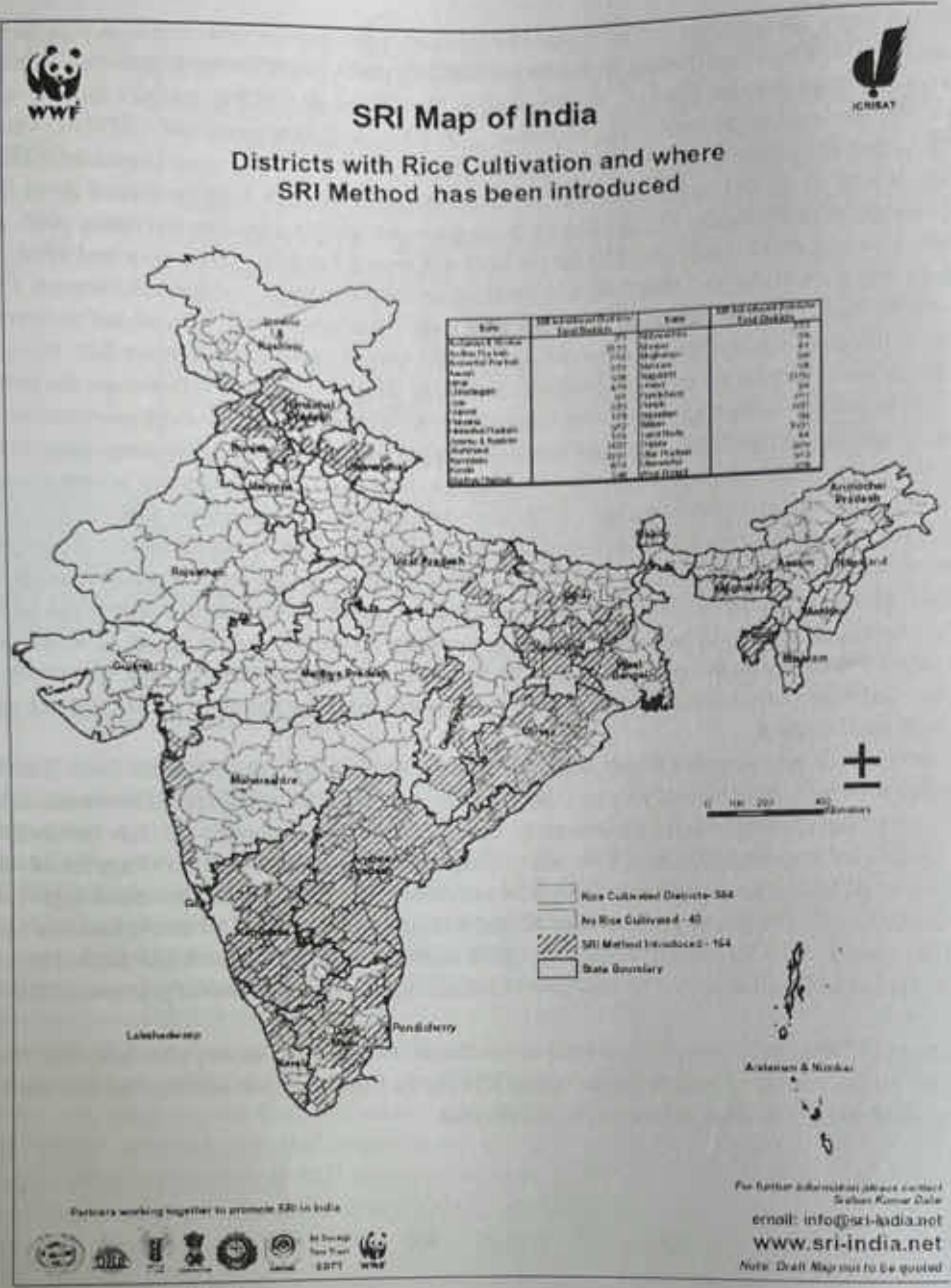
THE ADVENT OF SRI IN INDIA

The advent of SRI in India takes two routes: firstly through the agricultural university, state agencies and research organisation and second rout is through civil society organizations, informed farmers and NGOs. The former rout is dated back to 1999-2000 where as the second one is dated back to 1960s. In fact the experiments taken place at that time when SRI dose not exist formally. SRI formally came into being in 1987. in 1963-64 H.R. Richeria from Central Rice Research Institute Cuttack developed a technique for rice cultivation through clonal propagation. It is sure that he is not aware of SRI but some of the principles of SRI were present there. So though not formally but informally India is early starter in this regard and Richeria demands a graceful mention in the history of SRI in India. But after that there is a long gap. Richeria's effort can be best explained as an effort of committed scientist for giving high yield to poor farmers. In that sense it is not any organized effort. Pondichery, a small dot in the Indian rice map, is probably the first place where an organized experiment of SRI had taken place. Auroville, the international commune is one of the leaders in sustainable agriculture, was the first civil society organization to have taken up SRI. They heard about SRI through a French pamphlet from Madagascar by a visitor to Annupurna firm. So that is the starting point regarding organized experiment of SRI. Mostly at this time in 2000 Dr. T.M. Taygarajan, Professor of Soil science in Tamil Nadu Agricultural University (TNAU) first heard about SRI through a collaborative project on water-saving rice cultivation. Within 2000—2002, Tiagyrajan had initiated different experiments throughout

TN, though in a very small patches of land. Later on in 2002 M.S. Sawaminathan Foundation, a chennai based NGO had taken up SRI for experiments. In November 2002 Norman Uphoff, the most important proponent of SRI gave a presentation to the Ministry of Agriculture, New Delhi on SRI but got very little government response. On the other at the same time, in January 2003, Dr. A. Satyanaran from ANGRAU visited Sri Lanka for having a first-hand experience regarding SRI and that was one of the most important milestone in the course of journey of SRI in India because Dr. Sataynarayn came back fully persuaded about SRI and taken up this task more forcefully. Understanding its immense potentiality regarding increasing yield , in 2002 PRADAN, a leading NGO is taken up SRI for promoting it among farmers, mainly poor and tribal farmers with whom they are working and they took it to West Bengal and Jharkand. Actually in between 2000 and 2003 many different activities had taken place to set the stage for advancing SRI in India and more and more people from different section of the society came up with their own contribution to advance SRI. It is also true that people becomes convinced about the immense beneficial aspects of SRI and that changes the previously sceptic people to adopt and advance SRI. But interestingly we didn't find any all round governmental effort or a policy regarding SRI till 2009. It is true that many state governments took initiatives regarding this but in most cases due to constant persuasion of some enthusiastic individuals. The initiatives are not out of some felt need. On the other it was evident that the civil society and agricultural universities like TNAU, ANGRU constantly engaged themselves for propagating SRI among farmers. This is not because it is new rather it came out of their felt need. It became clear to those concerned persons that green revolution technology is problematic grossly in two sense: firstly due to its heavy independence on chemical fertiliser which reduce the soil productivity drastically. In long term it is not sustainable. So people were in search of something like organic farming to cope with this problem. Secondly the green revolution technology is incrementally costly. So it is the need of the hour to find a new way of farming so that cost of production can be cut down and SRI proves itself in this regard.

The advent of SRI is very complex in that sense but it is clear that it is also the need of the hour. That is why the spread of SRI throughout India is very amazing and keeping it in mind that this spread has been taken place without very strong support from the Central govt. The SRI map of India gives a very clear picture about its spread. People are accepting SRI from 2003 and within 6 years it is spread over a very huge no. of villages. Recently Govt. of India announced National Food Security Mission (NFSM). Under this mission govt of India tried to promote SRI. The primary objective of NFSM is to produce additional 10 metric tons rice by 2011-2012. The targeted area is 20 million hector from 133 districts of 12 states. Within this 20 million hector, SRI will be promoted in 5 million hector. So now govt of India is taking interest in case of promoting SRI.

So the advent of SRI in India is complex journey and different section of the society play their role. Now SRI is accepted all over India. Farmers are accepting SRI for its beneficial potentiality; one the one hand it increases yield and on the other it reduces production cost.



Source : WWF Website

Section-IV

THE ADVENT OF SRI IN WEST BENGAL

In case of West Bengal Govt is taking initiatives regarding spreading SRI in different districts with special focus on those eight districts, which are NFSM districts also. In kharif season of 2008-09 the production of rice was 10657.5 thousand mt and yield was 2450 kg / ha. The target for 2009-2010 is 11200 thousand MT production. Yield should be increased and the target for this is 2530 kg/ha. In West Bengal eight districts are identified as NFSM district. State govt. is actively engaged in those districts in case of promoting SRI through demonstration, training, publishing leaflets and also through supporting different NGOs. Govt is also supporting the SRI in other than NFSM districts very actively. Many NGOs are also working in case of promoting SRI. PRADAN is the very first NGO who brings SRI to Purulia before any initiative had taken place regarding SRI in West Bengal—PRADAN is the oldest one in this regard. It is working in Purulia district for a quit long time mainly focused to tribal farmers. Now many other NGOs are taking SRI as one of the important proponent for livelihood activities. Laterestingly some organizations like Sabuj Sangha, Prasari take the challenge of spreading SRI in Sundarban delta Which in not so suitable rice cultivation. One of the important problems of this area is the lack of sweet water which is necessary for rice cultivation. On the other the area is actually flooded with saline water, which is not very suitable for rice cultivation. So lack of plenty sweet water and flooding with saline water make cultivation very problematic and actually it creates the major hindrance in case of increasing income of those people residing here. SRI gives them a new hope. As it requires less water it is very much suitable for them. Seeing the advantages, now many farmers are coming up. In the demonstration plot the production is one and half times of the traditional one though it uses complete organic farming. The water requirement is so low that farmers are quit amazed with this technology. In south 24 parganas JEEVIKA is also promoting SRI. Another two big organizations—International Development Enterprise and World Vision—are working on SRI mainly in North Bengal. The prime actors in case of West Bengal are:

1. Govt. of West Bengal, Agriculture Department with main focus on NFSM districts
2. Sabuj Sangha in Suderban Delta region
3. JEEVIKA in south 24 parganas
4. World Vision in North Bengal,
5. International Development Enterprise in North Bengal
6. PRADAN in Purulia.
7. PRASARI in Sundarban and North Bengal
8. Ambuja Cement Foundation in Murshidabad and Malda.

Note :

I am grateful to The Livelihood School, Hyderabad as they give us a chance to understand SRI by engaging myself in research project on SRI carried out in Orissa and Andhra Pradesh in 2004. From then I am actively engaged in cse of propagation of SRI in India as well as in West Bengal. I am also founder member of 'Banglar SRI' – an informal group of people who are actively engaged in propagation of SRI in West Bengal.

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A Comparative Study of Research & Development Management In Indian Iron and Steel Industry with Special Reference to Tata Steel & SAIL

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INTRODUCTION

Iron and steel industry is one of the basic industries of India. It has a long and honorable history of more than seven decades. However, its major growth occurred during the period of 1956 through 1974. The government appointed a Technical mission in 1952 to assess the existing and future demand for steel in the country (Pal,1997). The appointment of the mission was a part of the activities relating to the feasibility study of the state investment in the steel sector. In fact, the rapid development of the steel capacity is indeed a logical corollary of any programme of rapid industrialization for a developing country. It is used as a basic material in the manufacture of metal products, electrical machinery, transport equipment, textile and other machinery.

At the time of independence in 1947, the total capacity of Iron and steel industry was of the order of 1.3 million tons – 1 million tons from the Tata Iron and Steel Company and 0.3 million tons from the Indian Iron and Steel integrated plant with an installed capacity of 10 million tones(Sundaram,1998). The real development of Iron and Steel industry ȯn modern lines occurred only during the second plan period. According to the then Industrial policy resolution the existing private sector units were allowed to continue but new units would be started only by the government. IISCO has been taken over by the government due to mismanagement. During the second plan three integrated steel plants were started in Rourkela, Bhilai and Durgapur. Another unit was started in Bokaro in Bihar. Later it was decided to establish three more units in Salem, Visakhapatnam and Hospet.

Now most of the Iron and Steel units in the public Sector are under the control of the Steel Authority of India Ltd (SAIL), which was established in 1974.

Thus, initially the development of the Steel Industry was regarded as an opportunity and a challenge. In a way, the Iron and Steel industry has made a considerable progress from 1.5 million tons of crude steel in 1950-51 to nearly 18 million tons of crude steel in 1950-51 to nearly 18 million tons in 1994-95. This rate of growth is highly unsatisfactory and it has become an importer today(R.B.I Report 95-96) which is clearly shown in the following table-1. Report also shows that there has been decline in export of Indian Steel in South Eastern Asian Countries in addition to CIS nations. So, Research & Development management has to play a vital role. Although we find that after liberalization, there have been no shortages of Iron & Steel materials in the country. But, we find that prices of iron and Steel have been declined but the input lists have gone up. Besides this, there is a major slackness in demand in major South Eastern Asian markets led to highly competitive global exporter of our steel we have to do much in research and development.

In R&D setup, all the research and development work is done through various project teams. Thus, the

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organizational life is more or less synonymous with project life. In this context top management can play a significant role in acknowledging these facts as well as creating conducive environment for creativity and innovation.

That is why, a budget is made for Research and Development by management in an institution or industry and after that its effectiveness are find out.

Table - 1

YEAR	STEEL IMPORT (Quantity in Million Tonnes)
1994-1995	1.93
1995-1996	1.86
1996-1997	1.82
1997-1998	1.81
1998-1999	1.64
1999-2000	2.20

WHY THIS STUDY

In the present study a comparative study is to be made in the area of Research and Development management between TATA STEEL and SAIL. As we know the SAIL plays the role of facilitator by providing broad directions and assistance to new and existing steel plants in the liberalized scenario. Although, the liberalization of industrial policy and other initiatives taken by the government have given a definite impetus for growth of the private sector. While the existing units are being modernized and expanded, a large number of new steel plants are coming up in the country based on modern, cost effective, state of the art technologies. So far 19 new steel plants have come up with a total capacity of approximately 13 million tonnes per annum. Of these 6 units of total capacity of around of 3.5 million tonnes have already been commissioned. Due to this, the role of private sector has become more important because its share has increased from 51.4% in 1991-92 to approximately 67% in 1998-99 and is further likely to continue(SAIL's Report). On the other hand, share of SAIL units have a declining trend, which indicates the fact that management of Public sector units are not good.

That is the main cause that Iron and steel industry, both in the public and private sector; continued to pursue their research and development activities to deal with their plant specific problems, assimilate and innovate newer technologies, utilize Indian minerals and raw materials in larger proportion, reduce pollution and conserve energy and reduce cost of production. Although, the Research and Development Centre for Iron and Steel, (RDCIS), Ranchi, is trying to meet challenges in technological expertise and competence to fulfill the need of SAIL steel plants and customers. On the other hand, TATA STEEL plant is also making to face the new challenges due to liberalization and is putting special emphasis on its Research and Development management.

OBJECTIVE Of THE STUDY

India Iron and Steel industry is the key industry of India and has played a vital role to make it strong. In present study an effort has been made to find out that what types of Research and Development activities are being done by management of TATA STEEL and SAIL in general. SAIL and TATA STEEL, both work in the same areas i.e. producing steel and other related items. However, the main objective of R&D activities of TATA STEEL is to make it profitable and World class producer of quality steel and to identify and develop new products and processes so that the company stays ahead of its competitors and to face any challenges in future and to make India on the Map of the World in the steel section.In fact without proper management of Research and Development this is not possible. Besides this, we also find that the per capita steel consumption is too low in comparison to North America i.e. about 450 K.G. and 22 K.G. respectively. So, it becomes a vital point for management to point out why after seven, decades our Steel Industry is in such condition. It has also raised its finger on the Research & Development Management. Now, it has become more important due to liberalization policy of the Government. In this direction, the study of R&D management of TATA STEEL and SAIL has become more important.

Thus, the main objectives of present study is to find out the comparison between the R&D management in different areas of TATA STEEL and SAIL to solve the burning problems of Industry i.e. modernization, rehabilitation, diversification, renewals and replacement of integrated steel plants. That is why, a total expenditure of Rs. 20.02 crores on R&D activities has been made by SAIL in the year 98-99 although it has a declining trend in comparison to the year 1997-98 which is Rs. 47.05 crores; On the other hand, TATA STEEL has an expenditure of Rs. 10.03 crores which also shows a declining trend the comparison to the year 1996-97 which is Rs. 14.31 crores.(Annual Report, GOI,98-99)

Thus, it is clear that the main objective of this study is to make it more important in the steel sector to eradicate its problem in different section and it becomes essential to compare the role of management in the area of Research and development because this is the need of the hour. Therefore, the objective of this study is to find out how, where, when and what kind of support the top management can provide to the Research & Development so that they can be more innovative, productive and effective. All these activities are related to top management in both the sectors.

HYPOTHESIS

Iron and Steel industry is the heavy basic key industry of India. At present, due to liberalization policy of the government the importance of Research and Development management has become more important. The Research and Development is one of the prime corporate activities to differentiate oneself from competition, thus forming a fundamental part of the competencies of a particular organization. It might therefore, surprise from the prospective of management theory – that research and development activities are increasingly becoming more competitive. Before liberalization, Indian industry never realized that they were nearing death.

But after the liberalization, in 1991 they realized the issue. So the research and Development Management has to play the vital role.
In this globalized era, the focus on the GATT treaty has acquired significant political dimensions not only on the domestic arena but in global forms as well. Today, while technology is changing in such a rapid pace that a product can get outdated within days. Indian industries are yet to adapt themselves to the changing environment for almost 50 years. They have lived under the shelter of protection and even today, the views of protectionism have emerged from Indian industries under the pretext of seeking time for the structural adjustment. They are still marked by low productivity, lack of research and development, unplanned growth and above all lack of competency.
It is well known that labialization package introduced have necessitated embracing a whole new world of technology. Earlier Indian industries had been thriving on outdated technologies, producing low quality products at high costs and were able to survive because of protected market with hardly any competitor worth the name

Before 1991, the focus of policy had been to invest in heavy industries to accelerate economic development. Though both the private and public sectors were taken care of the tilt was towards the public sectors. And today' many public sector enterprises are sick as they lack a professional approach and are saddled with social responsibilities. Imports were kept at minimal levels with the emphasis on import substitution while experts were overlooked. There was not much foreign direct investment. Neither the Government nor the private sector tried to strengthen R&D activities. Thus the Research and Development Management has to play a vital role. As it affects the degree of productivity, profitability, market penetration, organizational goal achievements and winning the customers.

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Employment of Persons with Mental Retardation

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Productive employment raises the standard of living of a person and also adds to the Gross Domestic Product of the country. However employment to disadvantaged persons like persons with disability brings about improvement of their quality of life socially and economically and also ensures dignity and recognition in their family and society. This is because self-esteem and financial gains generated from employment would offset to a great extent the negative impact of disdainful attitude of the society.

There is a general consensus in the world over that employment is the most essential but the toughest aspect of rehabilitation of the disabled persons. In India, employment of the disabled is a more potent problem due to near non-existence of social security benefits, limited education and training facilities and high rate of illiteracy amongst the disabled population. It is found that most disabled persons and their families come from the poorest rungs of the society (Mohapatra and Punani, 2004). The cost of maintaining such persons in the family adds to the financial burden. Thus the economic rehabilitation does not remain an individual need;it becomes individual family's need. Besides, for persons with mental retardation, any types of engagement including activities of daily living also bring about significant change in their life. Moreover the training of independent living relieves their escorts especially mother who can engage themselves in other productive purposes meaning income generating activities.

The economic rehabilitation is vital for the persons with mental retardation to stand up as equal partner of the community. Actually persons with mental retardation are traditionally not given the opportunity for open competitive employment for various historical and attitudinal reasons and there is no job reservation in India like other disabilities. They have potential to work, earn and live in the community as respectable citizens, if provided with necessary training, placement and support services. Decent vocation is the fundamental right of any human being whether he is disabled or not. It guarantees equity, security and above all human dignity. It has been established that person with mental retardation can perform competitively in various industrial jobs, rural crafts, trades and agricultural operations.

The problem of employment can be addressed in two ways, first, they must be provided with the necessary vocational skill through training and second, either they can be assisted for getting an employment in government and private sector or they have to be helped for self-employment generation.

Actually vocational rehabilitation is part of the employment process. It may be achieved through open, self or sheltered employment, gainful occupation or income generation. ILO recommendation No. 99,Paragraph 1(a) reads: " For the purpose of this recommendation the term ' vocational rehabilitation' means that part of the continuous and coordinated process of rehabilitation which involves the provision of those vocational services e.g. vocational guidance, vocational training and selective placement, designed to enable a disabled person to secure and retain suitable employment".

Historically, India being an agrarian country is endowed with a large population living in rural area. Indian villages are traditionally known for their culture of community living. Persons with mental retardation were treated as equals and part of the community and they are eventually included. They are provided with due

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care and rehabilitation services through the institution of family and villages which is seen to be wanting now. In urban areas high rates of youth and adult unemployment and a more competitive and demanding nature of many jobs severely restrict the chances of mentally retarded persons securing employment. Therefore it is more important that young people with mental retardation should receive careful training and preparation to help them not only to find, but also to keep a job.

Rehabilitation services for the persons with disabilities in an organized manner started as a movement after independence, particularly with the influence of urbanizations and industrialization. In the subsequent times many development programs have been launched in which both the government and non-government organizations(NGOs)have worked together to create facilities for the rehabilitation services for the persons with disabilities. Gradually a paradigm shift is taking place (Rao, 2002).

In India the number of disabled persons is 1.85 crore and they formed 1.8% of the total estimated population (NSSO, 2002). These figures could be an under estimation because according to the United Nations report,the proportion of disabled people among the total population in the neighboring countries of India are 5.6% in Bangladesh, 6.3% in China and 7% in Sri Lanka. It can be reasonably assumed that the proportion of the persons with disabilities in India constitute anywhere between 5% to 6% of our population. The mentally retarded person per 100000 persons is 94 in India. The estimated number of mentally retarded persons of age 15 and above is 295700 and 19 and above is 218000 (NSSO, 2002).Thus the number of adult mentally retarded person is not negligible in India.

Despite much international and national legislation, policies and practices, vocational training and employment situation of mentally retarded (MR) persons in India is not satisfactory. The number of MR persons per 1000 MR persons of age 10 and above attending vocational courses, engineering and non-engineering, are 0 and 4 in rural area and 2 and 13 in urban area (NSSO,2002). Therefore only .04% MR persons in rural area and 1.5% in urban area are attending vocational courses. Thus the position is slightly better in urban area.

The broad usual activity status of MR persons shows that per 1000 MR persons, 80 persons are employed, 1 person is unemployed and 919 persons are out of labor force. Unemployed are those who are available for work but could not find work. 'Out of labor force' means 'not engaged in work and also not available for work' (NSSO,2002). Thus only 8% are employed.

The usual activity status of MR persons of age 15 and above per 1000 MR persons in urban area shows that 2 persons are self-employed in agriculture, 23 persons are self-employed in non-agriculture, 7 are regular employees, and 26 are casual laborers (NSSO,2002). It shows that casual work dominates among different modes of employment.

The occupational distribution of MR persons shows that in rural area out of 1000 MR persons, 688 persons are engaged in primary sector consisting mainly agriculture, fishery, forestry etc., 140 persons are engaged in secondary sector consisting mining, manufacturing, construction etc. and 165 persons are engaged in tertiary sector consisting of trade, transport, communication, repairing services, health, education etc. (NSSO, 2002). Thus the primary sector is the main provider of employment in rural area and tertiary sector is the main provider of employment in urban area.

The government help in the form of imparting vocational training is meager in the sense that per 1000 MR persons 42 in urban area and nobody in rural area got vocational training supported by the government. Government and semi-government job provision is also negligible. Only 22 persons in urban area and 19 persons in rural area per 1000 MR persons acquired jobs in these organizations (NSSO, 2002). It shows that although government of India has some programs for vocational training and employment, employment related activities of MR persons is not at all supportive as to improve their condition.

While employment is the ultimate goal for everyone in life, countries like India with high unemployment rate even among normal individuals pose specific problems for employment of MR persons. However, there are a number of jobs which, given an opportunity, a MR person will perform as effectively as normal individuals especially those that are routine, repetitive and requiring relatively minimum social contact. Such jobs can be made available in sheltered, open and self-employment.

A sheltered workshop trains a person with MR in an occupation and employs him in the workshop itself. Moderate and mildly retarded individuals also benefit from sheltered employment because they are trained in specific tasks matched for their ability and they work under supervision. Examples of sheltered employment are assembling and packing units in workshops, carpentry units, spray painting, file, folders, note-book making, paper-tumblers making.

A MR person can function gainfully in an open employment situation with initial support from the trainer provided he has developed the necessary social competence also. For open employment, mildly retarded persons are suitable. The suitable jobs for open employment are office boys, helper in canteens, and helper in stationery and grocery shops, helper in vehicle workshops and in printing press, book-binding, photocopying and cyclostyling machine operator and washing machine operator.

India being a predominantly agricultural country, self-employment has good prospect for MR persons in the rural area. It is successful if the MR persons are given appropriate training in a particular job where other members of the family are supervising or supporting him. Dairy firms, poultry in rural area and roadside pan shops, kiosks etc. are some of the examples of self-employment.

As the employability of the formal sector (those income generating productive activities which are governed by the government rules and regulations viz.Labour Laws, Tax Laws etc.) is negligible, informal sector is the last resort for the employment to all including MR persons. The advantage of 3% job reservation in the formal sector is mostly taken by the persons with other types of disabilities. The ILO believes that the best opportunities for men and women with mental handicap in developing countries are; inclusive work in support of family farming, household and productive activities, and work in the fast growing informal sector of the economy.

It is observed that employment in the informal sector is best suited for the MR persons. The work under supervision of an instructor and with peer group helps a MR person to get vocational training on the job and switch over to sheltered employment in the work. For the mild and moderate categories of MR persons, instead of over emphasis on academic achievement, exposure to more beneficial functional training for work and job locations will benefit them and support successful rehabilitation in jobs and independent living.

Actually pre-vocational training is a part of the employment related rehabilitation program. It is a systematic training by which an individual acquire such skills and behavior which are necessary for a particular vocation. It is an important phase between School programs (functional education) to Vocational Programs (employment related activities). The age group for pre-vocational training should be 14 to 16.

Given this perspective about employment of MR persons let us see the employment situation of MR persons in the organizations inKolkata, Secunderabad and Chennai. The observations are based on the survey under UGC-sponsored Minor Research Project undertaken by the author in 2008-09.

Most of these organizations are imparting pre-vocational training to the MR persons and are not able to give either sheltered employment or open employment. But the attitude towards employment has changed from

1980'sif we compare survey result of National Institute of Mental Handicap in 1988 where only 48.5% Special Education Centre were giving pre-vocational training. The fact that importance is given to the vocational training now is revealed by the increases in the number of vocational trainer in majority of the SECs in each city.

In some SECs mostly in Kolkata, vocational training is imparted on specific trades like candle, chalk, envelop and greetings card making, weaving, spices grinding, book binding, printing, embroidery works, screen printing etc. Such works can be described as craft activities rather than any serious effort to train adult persons with mental retardation in a vocation leading to employment and job placement. The earning from such trades mainly depends on push sale or sale at exhibitions which are at the mercy of the individual demand and therefore highly uncertain. These activities have no profit motive. The main purpose is to engage MR persons in some occupations; hence there is no wage payment on the basis of work done by each person. Thus employment aspect is quite neglected in Kolkata.

In contrast to this, most of the organizations in Secunderabad and Chennai are able to employ MR persons successfully in income generating activities. They are able to collect order from large scale private as well as public sector.

It is true that those who are successful had started straight from income generating activities and then extended their activities in special education. These organizations had started with the initiatives of parents which is lacking in Kolkata. The need for employment related rehabilitationprogram of MR persons is felt by the parents in Southern cities with the social movement and Mohapatra and B. PunaniMohapatra and B. Punaniconsistent efforts of NIMH personnel.

Thus how much we are able to use the potential of MR persons is a question of attitude, and prioritasion of the society. The capacity building of NGOs, self-help groups and parents' organizations is crucial in promoting employment of MR persons. For success of efforts for employment of MR persons it is imperative that there is coordination and cooperation among the planners, policy makers, trainers, various service providers, employers, co-workers and retarded persons and his family members.

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Corporate Governance & It's Impact on Performance – A Study on The Indian Banking Sector

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Abstract: The impact of banks' organization structure on performance and corporate governance practices has been discussed for a number of years, mainly in developed countries such as UK and US. This paper chooses to address above-mentioned issue in Indian context. It investigates two category of banks namely government banks and private banks. This paper adopts the Tobin's Q, and Return on Capital Employed (ROCE) as bank performance indicators. The following board governance variables are used such as Board Committees, Board Directors, CEO as a chairman, Board meetings, and Women Executive and Executive-Director ratio. Multiple regression analysis results show that board governance variables like board committees, board directors and women director are statistically significant to performance for banks where government has considerable stake. In addition, government banks are older and also have better market valuation than private banks.

INTRODUCTION

The liberalization reforms initiated by the Indian government during last decade have considerable impact on the Indian financial sector. Prior to 1991, Indian banking sector was under control of Indian government with exception of 22 private sector banks and few foreign banks (source: RBI). Since 1991, the Indian financial system moving from a unilateral administered sector to market driven system. After the economic crisis, there have been a number of initiatives to implement governance and disclosures practices in the Indian banking sector. In the recent past, overall corporate governance in Indian banks has improved steadily. Internationally, the influence of board governance on performance has been discussed for a number of years, but it is relatively new to Indian scenario, where corporate governance norms are implemented in the recent past. Board governance is a subset of corporate governance in determining financial performance of the bank.

It is evident from the research conducted by Fama and Jensen (1983); they argued board of directors is important in the corporate governance system. According to Mizruchi (1983) The Company board is a powerful center to have ultimate control over company affairs. It is true in the most of the cases, when CEO of the company willing to accept importance of board. Walsh and Seward (1990) found board plays a crucial role as an internal control mechanism. The literatures relating to company board identifies two broad categories of control mechanism namely internal and external.

The internal control mechanism is employed through board governance, equity ownership, compensation etc, whereas institutional investors influence, legal protection for individual investors, and active capital market for corporate control represent external control mechanism. This paper mainly examines internal control mechanism influence on firm performance. The variables selected for internal control mechanism are CEO as board

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chairman, Outsider ratio in the board, Board size, and number of board meetings held. Another important factor determines firm performance is ownership pattern. Ownership structure has been extensively discussed for long time among researchers, academicians, and business practioners. Berla and Means (1932) found relationship between ownership and management towards firm performance. They argued that firm performance is increased when management is separated from ownership. Jensen and Meckling (1976) used principal – agent conflict to explain divergence of thinking in firm related issues between owners and management of firm. Fama (1980), and Fama and Jensen (1983) suggested that these agency problems could be solved through systematic dispersion of firm's stake. Recently several studies have examined bank structure influence on financial performance. This paper describes bank structure in three ways namely government banks, private banks and foreign banks. The reason for three way classifications of banks, government banks tend to have different approaches to control, board size, board chairman, board meeting, outsider to be board etc. as compared to private and foreign banks. This paper investigates whether board governance is positively related to performance in government banks or in private banks.

Apart from above mentioned variables, this paper uses Tobin's Q and Return on Capital Employed (ROCE) as bank performance indicators. Most of the corporate governance literatures have used these variables as proxy for the bank performance.

This paper chooses to address the effectiveness of one set of corporate governance mechanisms (board governance) influence on bank performance. This paper is organized in the following way. The following section reviews the literature on corporate governance and also presents board governance (Board committees, Board directors, Women executive, CEO as a chairman, Board meetings, and Director ratio), and firm performance indicators (Tobin's Q and Return on Capital Employed). The section thereafter presents data sample and description of variables followed by a section that describes methodology. The section, before last section explains analysis of data. In the last section has finding of the study.

LITERATURE REVIEW

The recent corporate failures world over has reinforced the importance of corporate governance. It is important for investors to differentiate corporate on the basis of governance principles in order to find out good from the bad. Undoubtbly, corporate governance is need of the hour. Corporate governance is a control mechanism through which supplier of finance to corporations assure themselves of getting a return on their investment (Shleifer and Vishney, 1997). Corporate governance is concerned with managing the relationship among various corporate stakeholders (Malek Lashgari, 2004). In India, Confederation of Indian Industry (CII) has stated that "C.G deals with laws, procedure, practices, and implicit rules that determine a company's ability to take managerial decisions vis-à-vis its claimants in particular, its shareholders, creditors…There is a global consensus about the objective of good corporate governance: maximizing shareholders value", Subsequently Security and Exchange Board of India (SEBI) has come out with report on C.G.It stated that "…. fundamental objectives of corporate governance is the enhancement of shareholders value keeping in view the interests of other shareholders….". The major contribution of corporate governance is enhancing operating performance of firms, and also preventing the fraud (Yeh, Lee, and Ko, 2002). Black, Jang, and Kan (2002) found that companies with better corporate governance have better financial performance than companies with poor corporate governance. It is well supported by Jensen and Meckling, (1976) and Fama and Jensen, (1983).

They found good corporate governance really helps owner's to exert control over corporate affairs. Corporate governance mechanisms give commanding position to the owners to manage corporate insiders and managers.

BANK GOVERNANCE

The board of directors is the ultimate governing body on bank affairs. The main task of bank board is to monitor and control management on behalf of owners. The board of director is top executive unit of a company and is charged with the responsibility of supervising operations of the company's management (Hsiang-Tsai Chiang, 2005). Normally, board performs variety of functions such as monitoring and controlling management, approving dividend decisions, deciding business policies, and facilitating development and implementations of corporate strategy. Boards are required to deliberate on the strategic agenda of the company. Boards plays major role in corporate governance in the bank.

Effectiveness of the board depends on the board directors. According to company's act 1956, board size is minimum of three directors in case of public limited companies and two in case of private limited companies. Jensen (1993) found a board should have maximum of seven or eight members to function effectively. There is no clear-cut evidence that smaller board performs effectively than larger board. In a smaller board, members are more likely to agree on a particular outcome (Lange et.al, 2000). In contrast to this view, larger boards may act as an increased pool of expertise and a better ability to form reasonable judgment (Goodstein, Gautam& Bocker, 1994). It is hard to arrive optimum number of directors for the board. Hsiang-Tsai chiang, (2005) found insignificant relationship between board structure and firm performance. Ingrid Bonn (2004) also found board size never leads to firm performance. He argued that it is not board size, per se, that was important for firm performance but rather composition of the boards in terms of the ratios of outside directors. According to SEBI listing clause 49, not less than 50 % of the total number of directors should be an independent non-executive director. In case CEO as a chairman of the boards, at least half of board should have independent directors. Lang.et.al (1999) found inside directors generally have a greater understanding of the company's operations. However, outside directors are more professional and are in a better position to exert control over management. Fama (1980) stated that independent directors are better in managing and monitoring management self interest and opportunism. Past research have shown mixed results on performance influence of outside versus inside directors on firm performance. Most of the researches have support outside board members influence on firm performance Pearce and Zahra (1992) argued there is high degree of association between executive ratio and firm performance. It is well supported by Mahajan and Sharma (1985), They found board with high proportion of independent directors works effectively. It is common practice that CEO of the bank may act as chairman of the board of directors. There is contrasting opinion among researcher regarding CEO of the firm concurrently act as chairman of the board. One set of researchers argued against it, just because board effectiveness may come down drastically due to lack of independence. On the other hand, CEO can give ultimate direction to the boards regarding company's future strategy and able to run in a proper way. Past research in the direction provide support for both argument. Hsiang-Tsai (2005) found negatively related to performance if CEO assumes role of chairman of the board. The same results provided by Fama and Jensen (1996). On the other hand, Anderson and Anthony (1986) argued that it may reduce conflict between CEO and board of directors, and that leads to effective functioning of board. Board meeting is an important element in the board governance. According to SEBI, listing agreement 49, minimum four board meetings must be held in a year with time gap not exceeding 4 months between two meetings. Confederation of Indian Industry code on corporate governance has recommended minimum of six meetings in a year. Each meeting should hold at an interval of every two months. The logic behind this exercise is to examine and question the executive actions. Executives are held responsible for the way they conduct the business in the board meetings. There is relationship exists between number of board meetings held and firm performance.

It is understood that government banks have a long-term orientation, which encourage a strategic approach. Government banks differ from other firms on day-to-day matters. In addition, government controlled banks rarely given up management control to managers and they are expert at retaining ownership. Past literature showed that government ownership is positively significant to profitability, but it is less significant to market returns. According to Narendar et al (2005), foreign banks in Indian put up superior performance than other domestic banks. Allen et al (2005) argued that state owned banks have poor long-term performance for the sample banks from Argentina, but these banks dramatically improved during privatization of banks. The bank controlling rights and cash flow rights are having positive correlations (La Porta et al, 1998). They further argued that state owned banks is a common feature in many developing countries (La Porta et al, 2000) The reason for wide spread of state owned banks in emerging countries that the government credibility is more or less depend on stable financial sectors in the country (Arun and Turner, 2002). In India, the government has taken appropriate steps to implement good corporate governance practices in Indian banks. Results of that, the public sector banks have disinvested infavour of Indian public. But, there is literature, which account negative impact of corporate governance on bank performance. There is a negative relationship between governance intervention and performance for Spanish banks (Rafel et al 2004). The empirical evidence concerning the possible association of bank performance and corporate governance is extremely limited. This paper can be uniquely placed as one of few papers emerged in India that try to explain public sector banks influence on board governance practices.

HYPOTHESES

With reference to review of literature of corporate governance, and different types of banks, this paper develops the following hypotheses for study.

H1: Public sector banks are older and have better valuation than private sector banks

H2: Corporate governance practices have significantly influence the performance in the Indian domestic banks

H3: Public sector banks' corporate governance practices significantly different than private sector banks.

DATA SAMPLE AND DESCRIPTION OF VARIABLES

The data that have been used in this paper has been obtained from PROWESS, a financial database of Center for Monitoring Indian Economy (CMIE) and the website of Reserve Bank of India (RBI). The initial data sample collected as on 31st march 2010. The same sample is divided into three sets namely government banks, private banks and foreign banks. Hence, The final sample consisted of 89 banks, in which public sector has 28 banks, the private sector consists of 30 and the remaining 31 banks belong to foreign banks (Source: RBI). In India, the implementation of corporate governance practices is directly linked with Security Exchange Board India (SEBI) under clause 49 listing agreement. According to SEBI, the corporate governance practices applicable only to banks that are listed in the Indian stock exchanges. At present, only 41 banks listed in the Indian stock markets, where 21 banks belong to public sector and the remaining 20 banks in the private sector category. The final sample consists of only these 41 banks.

Bank Performance Indicators

A bank performance indicator consists of two variables namely Tobin's Q, and Return on Capital Employed. Most of the past literature on financial institutions has used accounting measure as a proxy for performance. In this paper, both accounting and market valuation measure are used to account corporate governance practices intervention.

a. **Tobin's Q:** Tobin's Q is a very widely used measure of corporate performance. It is defined as the ratio of market value of the firm to replacement value of the assets. Interestingly, original definition of Q has few practical limitations such as availability of timely and accurate Q date. It is understood that even computational procedure also is difficult to employ. Kee and Prulti (1994) found approximation for original Q value and it is computed as book value of debt plus market value of equity plus book value of preference shares over book value of total asset.

b. **Return on Capital Employed (ROCE)**: The profitability of an organization is measured through ROCE. It indicates the effectiveness and efficiency of an organization in generating earnings. It is calculated by dividing earnings before interest and taxes (EBIT) by capital employed.

Independent variables

Board directors: It is defined as the number of directors both executive and non-executive directors in the bank, it is denoted by FBd. Director Ratio: It is defined as the ratio of executive director to non-executive directors on the board, it is denoted by FDr. CEO as Chairman of the Board: This measure uses the dummy coded variable. If bank has CEO as a chairman of the board then it is coded as (1) and if not, it is coded as (0). It is denoted by FsCeo. Board Meetings: Total number of board meetings held in a year, it is denoted by F Bm. Board Committees: it measure number of committees in the banks, it is denoted by F Bc. Women executive: it is dummy coded variable where bank employs women executive in the board, it is coded as (1) or else, it is coded (0). This measure denotes by F We. In addition, the bank dummy is used to account the corporate governance practices differences between public and private sector banks. This bank dummy is coded by (1), if it is public sector bank, or else, it is coded as (0). The bank dummy is denoted by F Bank dummy.

Control variables:

This paper employs the following control variable for the study

Log Age: It is a difference between the current year and the year in which the bank was incorporated. Age is measured by the logarithm of the number of years since the banks were set up. Due to effect of learning curve and survival bias, older banks are largely to be more efficient than the younger banks. It is used in firm value related studies (Ang, Cole, And Lin, 2000). It is denoted by Fage.

METHODOLOGY

Corporate governance influence on bank performance is measured through multiple regression analysis. Multiple regression analysis is widely used multivariate technique, which uses to predict dependent variables from known independent variables. In this paper, multiple regression analysis is used to find out independent variables influence on dependent variables after controlling firm age. There are two multiple regression analysis model is constructed. The first model is based on all the banks listed in the stock markets. The second model uses a bank dummy to account the public sector banks' corporate governance practices influence on performance over private sector banks. Pearson correlation coefficient is also used to find out multicollinearity problem among independent variables. The correlation matrices determine whether multicollinearity problem is present in the independent variables or not. Correlation coefficient value is more than 0.80, where the multicollinearity problem exists (Ingrid Bonn, 2004). In addition, the descriptive statistics has employed to analyse the relationship between banks age and profitability. In equation form, multiple regression models are expressed.

Tobin's Q/ ROCE = á +â1 × FBd +â2 × FBc +â3 ×FCeo+â4 ×FBm+â5 ×FWd+â6 ×FDr +â7 ×F Log.age +•

Tobin's Q/ROCE = á +â1 × FBd +â2 × FBc +â3 ×FCeo+â4 ×FBm+â5 ×FWd+â6 ×FDr +â7 ×F Log.age + â8 × F **Bank dummy+ •**

ANALYSIS

Analysis is done on financial data collected from Prowess, CMIE database. The following section presents descriptive statistics, correlation matrix and multiple regression analysis on sample banks.

Table – I explains Descriptive Statistics of Sample Banks. According to above Table the mean value of Tobin's Q for public sector banks is 1.15 greater than private sector banks for the financial year 2004-2005. This result clearly indicated that stock markets in India have value the public sector banks better than private sector banks. The age of the bank is a vital factor in determining banks earning potential. It is understood that aged bank considerably does better business due to reputation factor. The age is a crucial matter for the firms in financial sector to capture the market share. With reference to Table I, mean age of the public sector banks is 75.09 years and 46 years for private sector banks in India. It is beyond doubt that why 74 percent of the total commercial banking assets are with public sector banks (Source: RBI). The relationship has been established from the table that aged banks can significantly to better business and also carries better appreciation in market place. Public sector banks have bigger board (mean board size is 11.33) than private sector banks (mean board size is 10.75). Number of board committees is one of the yardsticks for better functioning of the bank.

Table-I

Descriptive Statistics of Sample Bank

	1	2	3	4	5	6	7	8	9
1.Board directors	1								
2.Board committees	0.220	1							
3.CEO as a Chairman	-0.760	0.018	1						
4.Board Meetings	-0.239	0.028	-0.057	1					
5. Women director	-0.015	0.325*	0.011	-0.084	1				
6. Director ratio	-0.006	-0.049	-0.099	-0.168	0.050	1			
7. Age	-0.087	0.098	-0.032	0.264	0.047	-0.178	1		
8.Tobin's Q	-0.182	0.166	-0.096	-0.178	-0.139	-0.100	-0.313*	1	
9.ROCE	0.077	0.155	-0.085	0.164	0.293	-0.105	0.317*	-0.135	1

Table-II shows Correlation Matrix Analysis on Indian Domestic Banks. The correlation matrix results do not present any multicollearity problem among the independent variables. Though, few of the variables are having statistically significant relationship, but none of the variables carrying correlation coefficient of more than 0.8. The significant of this analysis is to fulfill the condition of multiple regression models, where all independent variables should be independent of each other.

Table III

Multiple Regression Analysis on Indian Domestic Banks

Parameters	*Tobin's Q (Model I)*			*Return on Capital Employed (Model II)*		
	Beta	**t test**	**p value**	**Beta**	**t test**	**p value**
1.Board directors	-0.371	-2.461	0.019*	0.134	0.811	0.423
2.Board committees	0.366	2.369	0.024*	-0.009	-0.055	0.956
3.CEO as a Chairman	-0.172	-1.324	0.195	-0.067	-0.426	0.673
4.Board Meetings	-0.250	-1.642	0.110	0.138	0.821	0.418
5. Women director	-0.257	-1.711	0.096	0.301	1.820	0.078
6. Director ratio	-0.192	-1.324	0.195	-0.055	-0.347	0.731
7. Age	-0.343	-2.321	0.027*	0.267	1.645	0.110
F test	2.562*			1.229		
R^2	35.2			21.6		
Adjusted R^2	21.5			5.0		
Number of banks	41			41		

*Significant at 0.05 levels

The Multiple Regression Analysis on Indian Domestic Banks is given in Table-III. According to above table the multiple regressions models are constructed on diffused ownership pattern, where public and private sector banks are put together to account for corporate governance practices influence on performance in the Indian domestic banks. Here domestic banks consist of both public and private banks in India, which are listed in the stock market. From the table III, it is understood that the multiple regression model I is statistically significant, where F test is 2.562 is significant at 5 percent level and it explains 35.2 variation in dependent variable. There are three independent variables have statistically significant relationships with dependent variable. The board of directors has significant relationship with bank performance, but it has negative influence. The board committees have positive influence over Tobin's Q and age is also sharing similar relationship with dependent variable. In model II, the F test is not statistically significant and it prevents further interpretation of the results.

Table IV

Multiple Regression Analysis on Indian Public Sector Banks

Parameters	*Tobin's Q (Model I)*			*Return on Capital Employed (Model II)*		
	Beta	**t test**	**p value**	**Beta**	**t test**	**p value**
Bank dummy	0.133	0.790	0.435	-0.446	-2.626	0.013*
1. Board directors	-0.374	-2.461	0.019*	0.146	0.957	0.346
2. Board committees	0.366	2.352	0.025*	-0.068	-0.050	0.960
3. CEO as a Chairman	-0.110	-0.672	0.507	-0.275	-1.671	0.104
4. Board Meetings	-0.223	-1.417	0.166	0.046	0.287	0.0776
5. Women director	-0.266	-1.752	0.089	0.329	2.152	0.039*
6. Director ratio	-0.209	-1.417	0.166	0.001	0.006	0.995
7. Age	-0.341	-2.293	0.029*	0.260	1.738	0.092
F test	2.294*			2.202*		
R^2	36.4			35.5		
Adjusted R^2	20.6			19.4		
Public sector banks/ private sector banks	21/20			21/20		

*Significant at 0.05 levels

Table-IV gives Multiple Regression Analysis on Indian Public Sector Banks. The multiple regression analysis shows that the models, which constructed on Indian public sector banks, are perfectly fit. The F test results for both models are statistically significant and also allow for further interpretations of the results. Few variables are having statistically significant relationship with dependent variables namely Tobin's Q and return on capital employed. The public sector banks corporate governance practices significantly influence performance over private sector banks. Public sector banks board of directors and Board committees has statistically significant relationship with Tobin's Q in the multiple regression model I. It is interesting to note that women director in the board is contributing significantly towards bank performance and it is evident from multiple regression model II. Finally, bank dummy used in this models to public sector banks' corporate governance practices influence on performance have emerged as statistically significant variable at 5 levels.

FINDINGS

This paper examined the influence of bank governance practices on performance. **Hypothesis 1** is constructed under the assumption that aged bank able to build better reputation over the years. Later on, banks tend to do better business due to reputation. This is proved to be correct because public sector banks are relatively aged and also carry better market valuation than private sector banks. The result suggested that corporate governance variables such as board committees and board directors do have impact on the bank performance. Hypothesis relating to Indian domestic banks are accepted because **hypothesis II** is statistically significant. This is really expected result, where board committees and board directors significantly related to bank performance. The result showed that public sector banks are relatively better in implementing the corporate governance practices. It is evident from the analysis that Public sector banks' corporate governance practices are significantly different than private sector banks. The **hypothesis III** is seems to be statistically correct, in which three corporate governance variables namely board committees, board director, and women director of public sector banks significantly related to performance. Surprisingly, private sector banks fairing poorly in employing corporate governance practices with respect to public sector banks.

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Understanding Bacteria, Virus, etc......

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Abstract : The paper takes a close look at the latest challenges to the virtual world in the form of virus, bacteria, worms and others. It also contains survey findings on the extent of this problem for the users – both individual and corporate. Last, but not the least, it gives some basic idea about the various types of antivirus available in the market and their mode of work in eliminating this menace. All this is supposed to create awareness among the large number of young users of the Net who have just started to venture into the cyber world.

THE BACKROUND

The modern world is teeming with multitude of pathogens like bacteria, virus, worms and others. They are causing huge losses to the mankind and sometimes even threaten to derail the normal pace of life. Inspite of enormous efforts by scientists, governments and the common public worldwide, there is no respite from relentless attack of these pathogens.

The above paragraph may seem to talk upon pathogens of the biological kind. But this paper is focussed on the pathogens of the digital world *i.e.*, the computer bacteria, virus and worms. These digital pathogens of the virtual world are causing similar disruptions to the modern lifestyle like their biological counterpart. The objective of this paper is thus to appraise the students, the academicians, the professionals, and the public at large about these newest challenges of the twenty-first century.

The paper comprises of five sections. The first section outlines the background. The second describes the alarming level of cyber attacks being reported by both Indian and global organisations. The third section contains the core of the topic – classifying and describing the nature of these digital pathogens. The next section outlines the workings of an antivirus system. The last section concludes the article.

PRESENT SCENARIO

All modern netizens (*i.e.,* the citizens of the Internet), whether they are individuals or organisations, face cyber attacks and intrusions on a daily basis. This alarming situation is amply highlighted by a survey entitled 'State of Enterprise Security 2010' conducted for Symantec, the well-known network security, by Applied Research.

The telephonic survey conducted in January, 2010 contacted 2,100 businesses and government agencies in 27 countries and found that all of them had experienced cyber losses of some type in the previous year. About

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seventy-five percent of organizations said they were hit by a cyber attack during the past one year. Forty-one percent of the victims rated the attacks as either 'somewhat effective' to 'highly effective'.

The top three reported losses were theft of intellectual property, customer credit card information, customer financial information, and shutdown of activities causing monetary loss in 92 percent of instances. The top three resulting costs, according to the survey, were productivity (36%), revenue (33%), and loss of customer trust (32%). The survey also found out that companies and government agencies, on average, spent around $2 million annually to combat these cyber attacks. The participants were reported to be utilising eight different IT standards like ISO, HIPAA, Sarbanes-Oxley, CIS, PCI and ITIL to combat the online threats. But even then IT managers reported that there were staff shortages in key areas, the most being in network security (44 percent).

CLASSIFICATION

The malicious programmes, *i.e.*, malwares found in the digital world are basically of two categories –

- Those that need a host program – Viruses, Bacteria, Trapdoors, Logic Bombs, and Trojan horses.
- Those that are independent and self-contained – Worms, Zombies.

Out of these viruses, bacteria, worms and zombies have the power to replicate.

Virus

A computer virus is a kind of malicious software written intentionally to enter a computer without the user's permission or knowledge, with an ability to replicate itself, thus continuing to spread. Some viruses only replicate while others can cause severe harm the performance of the system. A virus should never be assumed harmless and left on a system.

The most common types of viruses are described below:

1. **Resident Virus** – This type of virus is a permanent resident in the RAM memory. It can overcome and interrupt all of the operations executed by the computer system. An example of such virus is the Randex.
2. **Direct Action Virus** – The main purpose of this virus is to replicate and take action when it is executed. It infects files in the directory or folder that it is in and in directories that are specified in the AUTOEXEC.BAT file PATH. An example is the Vienna virus.
3. **Overwrite Virus** – Virus of this kind is characterized by the fact that it deletes the information contained in the files that it infects. The only way to clean a file is to delete the file completely, thus losing the original content. An example is the Trj.Reboot.
4. **Boot Virus** – This virus affects the boot sector of a floppy or hard disk. An example is the Polyboot.B.
5. **Macro Virus** – Macro viruses infect files that are created using certain applications or programs that contain macros. An example is the Melissa.A.
6. **Directory Virus** – Directory viruses change the paths that indicate the location of a file. It infects program files with the extension .exe or .com. Once infected it becomes impossible to locate the original files.

7. **Polymorphic Virus –** These viruses encrypt or encode themselves in a different way every time they infect a system. This makes it impossible for anti-viruses to find them and also enables them to create a large number of copies of themselves. An example is the Elkern.
8. **File Infectors –** This type of virus infects programs or executable files. When one of these programs is run, the virus gets activated, and produces damaging effects it is programmed to carry out. An example is the Cascade virus.
9. **Multipartite Virus –** These advanced viruses can create multiple infections using several techniques. Their objective is to attack any element that can be infected. They are considered fairly dangerous due to their capacity to combine different infection techniques. An example includes Ywinz.
10. **Companion Viruses –** Companion viruses are actually file infector viruses. They are known as companion viruses because once they get into the system they "accompany" the files that already exist. An example is the Stator.
11. **FAT Virus –** The file allocation table or FAT viruses are very dangerous. They prevent access to certain sections of the disk where important files are stored.
12. **Network Virus –** Network viruses rapidly spread through a Local Network Area (LAN), and sometimes even throughout the internet. When the virus infects a computer, it searches through the network to attack its new potential prey. When the virus finishes infecting that computer, it moves on to the next and the cycle repeats itself. An example is the Nimda.

Apart from viruses, the other common malwares are as follows –

Logic Bombs

These programs contain logic embedded in them that checks for a set of conditions to arise and then execute some function resulting in damaging actions.

Trapdoors

They are secret undocumented entry points into a program. They are used to get access to a computer without normal methods of user authentication.

Trojan Horse

It is a secret undocumented routine embedded within a useful program, the execution of which results in execution of the routine. Its common objective is data destruction of the infected document. An example includes IRC.Sx2.

Zombie

It is a program that secretly takes over an Internet-connected computer and then uses it to launch an untraceable attack. It is very common in Distributed Denial-Of-Service (DDoS) attacks. An army of zombie computers is also sometimes referred to as botnets.

Worms

These programs can replicate themselves and send copies to computers across the network to perform some unwanted functions. They use network connections to spread from one system to another. An example includes the Code Red.

Bacteria

They consume resources by replicating themselves. They do not explicitly damage any files. Their sole purpose is to replicate themselves and reproduce exponentially eventually taking up all processors, memory or disk space.

Keylogger

These are such programmes that secretly record the keystrokes punched by the user while on the internet. The information is used by companies and hackers to understand the preference of an individual and accordingly plan their advertisement or attack.

COUNTER MEASURES

The most effective countermeasure would be to keep your computer away from the internet and all removable storage devices like pendrives. Since that would be almost impossible to do, the next best solution is to install an antivirus software. Almost all latest anti-virus offers protection from other malwares too.

All antivirus programmes work through a three-stage process –

§ Detection – To detect the presence of any malware and its location in the computing device

§ Identification – To identify the specific virus by its name or its nature

§ Removal – To remove all traces of the malware and restore the infected programme to its original state

With the continuous evolution of different forms of malwares, the types of antivirus have also undergone gradual transformation. The following are termed as the generations of antivirus software –

§ First generation – Simple scanners that worked through recording of programme lengths.

§ Second generation – Heuristic scanners that worked through integrity checking with checksums.

§ Third generation – Activity traps that resided in memory and detected infected programmes.

§ Fourth generation – Full-featured protection suite of antivirus techniques, having access control capability

The more advanced techniques currently being offered are –

+ Generic Decryption
+ Digital Immune System
+ Behaviour-Blocking Software

However the users should always be careful about the antivirus they use. Free antivirus or the antivirus that has been copied from others machine should be best avoided as they are either outdated versions or are themselves some sort of virus disguised as an antivirus.

CONCLUSION

This article is a simple guide to the 'black hole' of the digital universe. Everyday hundreds of cyber attacks are reported from across the world. Vital information, often with no backup, may get lost forever in this black hole.

This paper thus attempts to appraise the common people, mainly the student community, about the residents of the black hole – the bacteria, virus, worms and others. It also talks about the generation of antivirus and their mode of action. It is thus expected that daily users of the digital network will have a clear understanding of the dangers they face and adopt appropriate measures to counter those threats.

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Warehouse Receipt Financing In India

- Scope And Challenges

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Abstract: Warehouse receipt financing may act as a powerful means to extend assistance to the Indian farmers so as to enable them to fight their battle of sustenance and growth. This mode of financing is slowly gaining ground in India, with quite a number of banks taking initiatives in this regard especially after the enactment of the WDRA Act 2007. This paper attempts to review the significance, applicability and potential of the concept of warehouse receipt financing in the Indian context and seeks to make an evaluation of the related problems and prospects from the standpoints of both lenders and borrowers. In short, the paper ventures to explore the scope and challenges of warehouse financing in the Indian scenario.

INTRODUCTION

Despite major strides in industrialization during the plan period and a steadily growing exposure to the global economy over the past two decades following the disintegration of Soviet Russia and the consequent end of the Cold War, the performance of the Indian economy still remains mostly and visibly under the clutches of the monsoon. This monsoon-determined performance of its agriculture on which the overwhelming majority of India's population depends for livelihood has motivated a wide section of commentators to view India as primarily an agricultural country. The story is not complete here. Even after the Green Revolution of the 70s, Indian agriculture, with an ever growing pressure felt on it because of an unchecked population growth, has remained by and large isolated from the required level of technological progress as is usually expected in any process of mainstream development. This has called for a more urgent attention to the issue and for quite some time in the recent period, the prospects of a second Green Revolution are being mooted at the national level. Significant efforts, in this context, are being initiated in recent times to remove the technological isolation of agriculture. More serious steps are being considered for introducing scientific methods in irrigation and cropping pattern, popularizing high yielding crops in a bigger way, setting up centralized information dissemination centers and cold storages and arranging for proper grading and standardization measures. But the efforts are far from being what may be considered as adequate to address the domain properly.

FARMERS' INTEREST

Indian agriculture has several major areas of concern. It holds out areas with wider gaps and shortcomings. In a country like India where agriculture is the chief determinant of economic development, any exercise of policy formulation for agriculture should bring the farmer's interest sharply to the fore. But more often than not, the small and marginal farmers have remained neglected. They have all along struggled to repay their

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debts. They always intend to hold up their crops till the lean season when the price and the profit potential is the highest. But inadequate storage facilities force them to sacrifice the opportunities that arise from seasonal price swings. Had the farmers been equipped with an appropriate credit system, they could have derived an advantageous position. Needless to say, if the farmers are benefited, immense distributive justice is generated. This justice is significant in a densely populated agricultural economy and it augurs well, especially in a set-up where ill-designed efforts for urbanisation often go to benefit a few at the cost of the farmers at large and parallel black economy and a distressing measure of corruption loom large under the veil of civilisation.

WAREHOUSE RECEIPT FINANCING

There are a whole host of means of yielding better results of distributive justice to the farmers. This paper makes an attempt to examine how far a particular facet of finance, namely, warehouse receipt financing can benefit the farmers. Poor harvest credit in the form of warehouse receipt finance has proved to be a critical component for agriculture sector growth in emerging economies. Efficient warehouse receipt finance allows farmers to avoid selling directly after harvest, when prices are depressed. It encourages storage by reducing the cost and by increasing liquidity in entire commodity chains, which in turn reduces price volatility too. By giving farmers access to this financing tool, it enhances their ability and incentives to invest in production.

WHAT IS A WAREHOUSE RECEIPT?

A warehouse receipt is a document issued by warehouses to depositors against the commodities deposited in the warehouses, for which the warehouse is the bailee. Warehouse receipts may be either non-negotiable or negotiable. These documents are transferred by endorsement and delivery. Either the original depositor or the holder in due course (transferee) can claim the commodities from the warehouse.

MODE OF FINANCING

Warehouse receipt finance uses the securely stored goods as loan collateral. It is sometimes called "inventory credit". (We are discussing the general concept here. Warehouse receipt financing is bound by different limitations in different countries and hence their terms of negotiability often vary between countries). It allows clients, such as farmers, traders, processors and others, to deposit commodities in a secure warehouse against a receipt certifying the deposit of goods of a particular quantity, quality and grade. Clients can then use the receipt as a form of portable collateral to request a loan from a financial institution. This type of financing is ideally lucrative for the lender too, since it allows them to immediately sell off a very liquid asset, namely the commodities they grow, if a farmer/borrower defaults on the loan. Warehouse receipts are means of accessing post-harvest finance for working capital needs. As a result, the financing cycle begins after harvesting the commodities (or goods).

NOVELTY

The concept of warehouse receipt financing is not new, but what is new is the innovative application of collateralized lending to extend financing in markets where other attempts have failed. The creative use of the basic principle behind warehouse receipts—collateralized lending—in order to design new financing instruments is making new waves in rural finance. Usually warehouse receipts can be issued as either single- or double-component documents. An ordinary warehouse receipt is a bearer document, and it is a document of title. The holder of the document has the right to withdraw the goods from the warehouse and dispose them. The holder also has the right to pass on the receipt to another party, by merely endorsing it to the new holder. Banks can use ordinary receipts to obtain direct ownership control over the commodities, but commodity sector players tend to be wary of receipts that convey such strong rights since there are no checks and balances, and the potential for fraud and abuse is relatively strong (unless an electronic registry is used). Double receipts (a standard civil law instrument) consist of two parts: certificate of pledge and certificate of title. They can be separated from one another. The certificate of pledge is provided to the lender in order to take out a loan, allowing the farmer who has deposited goods in the warehouse to borrow against those goods to cover his working capital needs. The pledge certificate indicates that its holder has the right to demand for repayment of the loan by the pledger (depositor) .The lender, however, does not give the borrower the full value of the goods in the warehouse to provision for the costs that the lender will incur. The lender also remains particularly cautious of the risk that may arise from the possibility of a compulsion of selling the goods in case of a loan default. He also remains alert about the possibility of a decrease in value of the stored good caused by price volatility in the respective commodity market. Secondly, the certificate of title has the right to dispose of the goods stored, but only after the loan has been repaid. The warehouse will release the goods only when both the certificates are presented together. The pledge certificate can be obtained from the lender on repayment of the loan with interest.

WHY WAREHOUSE RECEIPT FINANCING?

A transaction backed by a warehouse receipt allows a financier to shift its risk from the borrower to the asset. Since the lender can sell the liquid collateral asset in case of default, this type of lending lowers risk and reduces typical costs of commodity transactions—e.g., high loan servicing costs , high information costs, and high supervision costs. In addition, borrowers do not need a strong balance sheet or long credit history because the lender is not relying on the individual or company, but on the value of the commodity. Since the lending costs for the financier are reduced, the interest rate for borrowers could also be reduced. Warehouse receipts are a good mechanism for accessing short-term working capital loans because they do not tie-up fixed assets, which are more appropriate collateral for accessing long-term financing for capital expenditures. In addition, warehouse receipts offer the opportunity for borrowers who lack fixed assets altogether to access finance. Both the lenders and borrowers in the process of warehouse receipt financing enjoy some advantages, and face some limitations which are discussed in what follows.

EVALUATION

Warehouse receipt financing has a number of advantages for the financial institutions. First of all, warehouse receipts provide producers/farmers with instant collateral to guarantee a loan. Having this type of collateral with a high market value is attractive to the financial institutions (FIs), especially in lending to first-time loan clients who do not have a proven track record. Secondly, it helps in reducing seasonal price fluctuations. The warehouse receipt system has the effect of smoothing out seasonal price variations throughout the year for a specific agricultural product. As this gains popularity, more people are expected to become involved in the warehouse system. This can result in shorter and more competitive supply chains. Thirdly, it takes care of the aspect of liquidity. Unlike real estate or other forms of collateral, the warehouse receipt is liquid. It can be converted into cash either at a bank or at the marketplace. This is especially attractive to FIs, which may otherwise have difficulty in collecting repayments from the farmer. However, the technique is not an unmixed blessing for the financial institutions. It has been seen that in situations where the loan amount is tied to the estimated worth of the product, a lower price decreases the loan amount available to the farmer and thereby reduced the interest that the FI could potentially collect. Moreover, this system works only if there are reliable warehouses in the region. A financial institution (FI) can establish or manage a warehouse, but experience has shown that this is usually not sustainable for the FI. If an FI must step in to build or manage a warehouse, it should proceed cautiously and add this cost to the price of its inventory credit programme.

THE STANDPOINT OF FARMERS

Warehouse financing technique has several advantages to the farmers. First, warehouse receipts allow small-scale farmers to delay the sale of goods, allowing them to take advantage of large seasonal price produce while obtaining cash when the harvest begins. Secondly, it has price transparency. A side effect of the warehouse system is that farmer groups work together with the warehouse operator to establish prices based on the product's market value. This empowers farmers by providing them with up-to-date information on prices throughout the season. The farmers gain additional knowledge about current prices and can become 'price setters' rather than 'price takers'. Secondly, it allows for food security. Farmers can realize savings by 'buying back' their produce from the warehouse for home consumption during the lean season when food prices are high. But warehouse financing has its disadvantages as well, so far as the farmers are concerned. First, there is a possibility of a decline in profit. Quite often the farmer tries to maximize profits by holding the produce until the price reaches its peak. Once the price is at peak, the rush of additional inventories into the market causes the price to fall almost immediately. This practice may catch farmers with more than half of their inventory selling at the lowest, instead of the highest price. The net result is substantial erosion in the profit. Secondly, there is shortage of storage of agricultural products. This is especially true in rural areas, where the technology can be scarce or expensive. As a result, the stored product runs the risk for spoilage, loss from pests, and quality depreciation. Often an unreliable supply or shortage of storage chemicals that are used to preserve agricultural goods may decrease the farmer's total volume of usable produce and compromise the product's total value, thus decreasing the farmer's ability to receive the best price for the produce. Thirdly, transportation of goods to the warehouse is an added expense to the farmer. In rural areas where trucks and fuel are expensive and often difficult to obtain, transporting the goods for storage in the next village or closest town poses a major challenge. High transport costs will make farmers less induced to store their goods.

DEMATERIALISATION OF WARE HOUSE RECEIPTS

Initially warehouse receipts were issued in physical form in the sense that those represented paper documents. However, presently the option of dematerialising them and holding electronic warehouse receipts is also available. The limitations of holding physical warehouse receipts are as follows:

- Need to split the receipt in case the depositor wants to transfer a part of the deposit only.

- Need to move the warehouse receipts from one place to another with risk of theft/loss in transit/ mutilation, etc. if the transferor and transferee are at two different locations
- Risk of forgery.

However in the dematerialized form it is free of the above disadvantages and in addition offers the following benefits.

- The task of transfer of warehouse receipt can be effected immediaitely
- Reduces manual paper handling
- An audit trail of receipt activity is kept, and the electronic receipt system serves to back-up receipt data for the warehouse.

WAREHOUSE RECEIPT FINANCING IN INDIA

Warehouse receipt financing has already made a beginning for quite some time. But even today many institutions lack in the right will. Many have dearth in expertise to finance in warehouse receipts. The most plausible reason behind this sluggish growth is not really lack of money, but a glaring lack of awareness. Banks cannot get better collateral than the goods pledged which are always liquid and can be disposed of within no time. However, the prime risk that bugs them is the fear that the commodity kept as collateral may be disposed of without their knowledge and also that the price of the collateral might fall during the time of disposal. These risks can be mitigated by developing the concept of collateral managers, who would be primarily engaged in managing and safeguarding the collateral. The price risk which can lead to loss of value of the collateral can be reduced by way of monitoring the movements in its market value as well as by margining the use of price risk management instruments.

PROGRESS

India has taken a gigantic step in this field by enacting the Warehousing (Development and Regulation) Act, 2007 for the development and regulation of warehouses, regulations of negotiability of warehouse receipts and promoting an orderly growth of the warehousing business. For successful implementation of the scheme, the laid down provisions of the Act need to be scrutinized in greater depths. By virtue of this Act, the Warehousing Development and Regulatory Authority (WDRA) regulates warehouse issues, which were previously taken care of by the commodity futures market regulator, the FMC (Forward Market Commission). Of significance, warehouse receipt financing is now being undertaken by a number of banks but the growth achieved so far is not impressive. A number of banks including HSBC, Punjab and Sind Bank, IDBI, Bank of Baroda, Andhra Bank have gone some way to promote warehouse receipt financing. But it is very crucial for these banks to simplify their loan sanctioning procedures and, of more importance, to make their services known and accessible to the farmers in a bigger way. In that event, they can be expected to compete more efficiently with the private money lenders to whom the Indian farming community has fallen prey for over centuries.

PROBLEMS

Under section 2(4) of the Sale of Goods Act, 1930, a warehouse receipt is also included in the definition of document of title to goods. But the law did not provide sanctity to such receipts as negotiable document and did not provide for rights and obligations of warehouseman and holder of the warehouse receipt. Since it was not a negotiable instrument or document, it was difficult to deal in the documents of title for trading in commodities and raise finance against the security of warehouse receipts in India till date. Banks had always faced problem because these receipts were not treated as negotiable instrument under NI act 1881. In the year 2007 however the WDRA (Warehousing Development and Regulatory Authority) act was passed, but it conferred on the document in a certain way the same sort of limited and peculiar negotiability which is possessed by a bill of lading. On 26th April 2011, Prof. K.V. Thomas, Minister of Consumer Affairs, Food and Public Distribution, launched Negotiable Warehouse Receipt System. Henceforth the receipts issued to farmers against their storage made with Warehousing Development and Regulatory Authority (WDRA) are fully negotiable instrument backed by a Central legislation .This was long awaited and would also help banks to popularize this kind of financing. A major problem that held back warehouse receipt financing earlier was the paper form of documents. But after enactment of the WDRA act, electronic warehouse receipts have been gradually introduced. At present, the National Securities Depository (NSDL) and Central Depository Services (CDSL) operate as clearing house for settlement of trades pertaining to warehouse receipts (WR) for commodities. The demat account for the purpose has to be opened with the Depository participants empanelled with the depository. The warehouses should also be in agreement with the relevant depository and exchange. Suitable and approved accreditation agencies are helping in standardization of the commodities deposited, and also are providing information regarding quality and quantity of the lot deposited. This can assure the lender while extending finances. But still certain other issues also are creating hurdles. For example, when the small farmers intend to take physical delivery in the process of participation in futures market, they are required to adhere to stipulated market lots, and this often becomes a heavy burden for them. Another problem is that the negotiable warehouse receipts are issued by the registered warehouses only. Given the large demand for storage, private warehouses are also operative, but banks do not freely finance the receipts issued by these warehouses.

CONCLUSION

Warehouse financing can go a long way to improve the economic performance of the Indian farmers if the relevant institutions come forward in a bigger way. The right attitude of the institutions, the government and all others concerned figures most crucially in the overall scheme. If this is granted, the Indian farming community can derive immense benefits from warehouse receipt financing. Finance is same token to agriculture as well. Under the scheme of warehouse financing as suggested above the most vital input namely finance can be made available to the agricultural borrowers more readily and with greater ease. The lenders too can be assured of recovery of their loans and advances in a better way.

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A Note On Corporate Governance

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Abstract: In this article an effort has been made to throw a light on the responsibilities of joint stock companies towards their shareholders and other interested groups. In most of the time it is noticed that companies fail to give a clear picture of their management practices to the outsiders. Under these circumstances, it becomes necessary to apply the policy of Corporate Governance for fair management in the companies.

INTRODUCTION

A business enterprise is an important part of modern society. It has an obligation to look beyond the goal of profit earning only. Every business enterprise has a close relation with the society as it uses the society to supply the inputs and consume its output. Therefore it is essential that the business enterprise must discharge its responsibilities towards the society by serving the different social groups.

Now the question arises how far such responsibilities are discharged by the business?

As a life blood, finance is supplied by the investors. So it is justified that the investors must get proper return on their investments. When the size of the business is small then it is possible to supervise directly and take necessary steps to check malpractices. But as it grows larger like a joint stock company, this question becomes a serious one as it separates ownership from management. The capital of a joint stock company is procured from the shareholders. So they deserve transparency in accounting practice. They also have full right to know how their funds are being managed and whether they are getting proper return on their investment or not.

As their representative, the shareholders appoint a Board of Directors to manage the company. This Board of Directors again appoints a group of managers who practically handle the day-to-day activities and give report of such activities to the Board periodically. Thus the managers are required to make proper deployment of funds and function with the objective of maximizing returns on such fund.

The Board of Directors is thus required to play a vital role in the managerial process to give proper direction to the managers and their regular monitoring. But in practice field it is not always possible for the Board to give instructions for managing under different situations. As a result, those persons who are the representatives of shareholders become busy in satisfying their self-need at the cost of the investors. The result is, being dissatisfied, the shareholders would simply withdraw their investments from the company, which would result in reduction of share prices and ultimately the company would become a target of take-over. In order to get rid of these circumstances it is essential to have full control over the management and keep check on the activities of all those persons who have been given the responsibility of managing it.

INTRODUCING CORPORATE GOVERNANCE

Corporate Governance is the policy to safeguard the interest of all those parties who are directly or indirectly related with the company and deserve transparency in the management of the company. It is a process which

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looks beyond managing the company and move towards all those activities which are required to be performed efficiently to serve the social group comprising of shareholders, customers, creditors, suppliers and the community as a whole .

It is a system which exercises control from the planning stage of management and continues throughout the process of its implementation and execution thereby, ensuring achievement of corporate objective with proper transparency and accountability.

As defined by the Cadbury Committee (U.K.), corporate governance is "the system by which companies are directed and controlled".

The OECD (Organisation for Economic Co-operation and Development) Principles of Corporate Governance states that "Corporate Governance involves a set of relationships between a company's management, its Board, its shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set and the means of attaining these objectives and monitoring performance are determined".

Therefore, a good corporate governance system throws light on the efficient management of business by the managers and creates a relationship of trust and faith between the company and the society as a whole.

ROLE OF CORPORATE GOVERNANCE IN DEVELOPING COUNTRY

Corporate governance also plays an important role in the developing countries by providing them proper supply of funds. Corporate governance gives assurance regarding proper management of companies and attracts a large number of investors to invest their money and thereby helping in industrial development of the country. But corporate governance becomes a necessity when many companies in a developing country follows negative means in business policy which results into exploitation of all the sections of the society related to it. Hence it becomes urgent to introduce corporate governance in such a country which gives protection to the companies doing unethical business and depriving the shareholders and other related parties.

CORPORATE GOVERNANCE IN INDIA

India also witnessed the same problem during early 1990's which resulted in creating the urge for investigating the procedure of management in different Indian companies and applied corporate governance as a tool for investigation.

India's first code of corporate governance, introduced in the year 1997, was the CII (The Confederation of Indian Industry) code for 'Desirable Corporate Governance' under the chairmanship of Mr. Rahul Bajaj. Here the main importance was given on the performance of Board of directors and non-executive directors who work actively with the knowledge of different company laws and financial statements.

In the year 1999 a further change was noticed in the history of India when SEBI was created by the Parliament of India towards the development and promotion of securities market and protecting the interest of investors in such market.

SEBI constituted a committee on corporate governance for the first time in 2000 under the chairmanship of Mr. Kumar Mangalam Birla, to promote and improve the quality of corporate governance in respect of listed companies. With the object of ensuring proper management of companies, SEBI prescribed a format containing detailed information about the process and procedure of management. All the listed companies are required to submit a quarterly compliance report to the stock exchange fortnightly from the end of financial reporting quarter.

There are eight sub-clauses given in the compliance report namely,

a) Board of Directors
b) Audit committee
c) Shareholders/ investors grievance committee
d) Remuneration of directors
e) Board procedures
f) Management
g) Shareholders
h) Report on Corporate governance

After getting this compliance report from the companies, Stock Exchanges are required to check the degree of compliance and submit a report to SEBI within thirty days from the end of financial quarter.

In order to examine the justifiability and suitability of corporate governance in India, SEBI further instituted Murthy Committee in the year 2003 under Mr. N. R. Narayana Murthy.

This committee recommended training of Board members, election of Directors by shareholders and framing an Audit Committee with 'financially literate' non-executive members with at least one member having accounting and related financial management expertise. Everything must be transparent and shareholders must be informed regularly.

Thus there were some changes in method of Corporate Governance as recommended by the Murthy Committee over CII recommendation. The CII Code gave no importance on 'financial literacy' and training of Board of directors whereas the main stress was given on the above aspects by Murthy Committee.

CONCLUSION

The two committees of SEBI immensely changed the pattern of corporate governance in India. But it should not be the end. Such process must continue to improve the level of corporate governance through development of managerial ethics and creating the sense of social responsibility.

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Poverty Alleviation Programmes in India in the Era of Globalization : An Appraisal

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Abstract : Combating poverty has always been a major challenge to the developing countries like Inida. This paper emphasizes on the poverty alleviation programmes undertaken by the government of India since independence. It looks into the difference in the scenario of poverty in the pre and post globalization periods. Unemployment and unequal distribution of wealth are found to be the main reasons behind poverty in both periods. On the basis of the study some probable policies have been spelt out.

INTRODUCTION

In almost all underdeveloped countries where per capita income is very low, income inequality has resulted in a number of evils of which poverty is certainly the most serious one. In India, even now in spite of all the development during the past five decades, nearly 35% of the population was getting less than $1 (PPP, US) a day in 1999-2000. The fruits of economic growth have not benefited everyone uniformly. Some are left behind and some others are not touched by the benefits of economic growth. It is proved globally that the so called trickle-down effect does not work in all the societies and India is no exception to this. The period after 1980-81 was marked by severe balance of payment difficulties in India. During the seventh five year plan net invisibles could finance only 24% of trade deficit in the seventh plan. The real thrust to the globalization process was provided by the new economic reform policy introduced by the Government of India in July 1991 at the behest of the IMF and the World Bank. Most of the link between poverty and globalization is indirect. As developing countries have become increasingly intergrated into the world trading system over the past 20 years, world poverty rates have steadily fallen. Yet little evidence exists to show a clear-cut-cause-and-effect relationship between these two phenomena.

The plan of the paper is as follows : the next section spells out motivation behind teh present study. Section two gives a short history of the performance of the poverty alleviation programmes undertaken during the successive five year plan periods. In the third section, an appraisal is made regarding the initiatives of the government taken so far, especially in the glovalization period. The final section provides some policy implications and concludes.

MOTIVATION BEHIND THE STUDY

Measures on anti poverty or poverty alleviation programmes are necessary to find out the problem of poverty that has been lurking in our economy since independence. These programmes are needed to reduce the incidence

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of poverty in out economy, without which the vicious circle[1] of poverty becomes inescapable. Poverty cannot be eradicated but it can be reduced through the implementation of these programmes. The paper discusses various poverty alleviation programmes that were undertaken after independence, their successes and failures, which are needed to understand the current situation of poverty in our country.

In 2000, 260 million people in India were estimated not to have income to access a consumption basket[2]. One-third of the country's population is still illiterate and majority is not educated up to the age of 15 years[3] Even among the educated, all do not have employable skills of the modern economy. The education system is not tuned to the changing economic scenario. The large agricultural workforce in rural areas is not sustainable with diminishing cultivable land and use of modern methods of cultivation. As a result, the rural labour is pushed into cities in search of work but they do not have any employable skills in the urban formal sector often end up doing odd jobs in urban areas. Urbanization in this country is mainly due to acute poverty is not uniformly spread in the country. States like Orissa, Bihar and Madhya Pradesh have high level of poverty and the levels have not come down significantly in the post economic reform era.

HISTORICAL SURVEY OF POVERTY ALLEVIATION PROGRAMMES UNDERTAKEN DURING THE PLANNING PERIODS

Removal of poverty is not doubt one of the important aims of development in the developing countries like India since independence. Though the paper manily focuses on the poverty alleviation programmes, which were undertaken in the post globalization period, a brief literature survey has been done on the five year plans since independence to see the performance of the plans with respect to poverty alleviation. The paper recapitulates the pre-globalization Poverty Alleviation Programmes in order to have some idea in order to have some idea about the poverty situation in India.

The First Plan(1951-56) was an attempt to strike a balance between the previaling socio-economic conditions and the building up of a model society founded on the Indian Constitutional norms to protect and uplift the people of the weaker sections. This realization led to the implementation of the nation-wide programme of community development, in tackling poverty with the objective of facilitating socio-economic change primarily in the life of the rural population.

The Second Plan(1956-61) though nothing ot do poverty alleviation directly heralded a massive industrial development programme with an emphasis on balanced regional development of the industrial and the agricultural sectors. So that the people in backward areas could derive benefits of industrial development through increased employment and enhance income. This plan fuelled the development especially in rural areas.

The Third Plan (1961-66) tried to address the problems that cropped up in the second plan period without bringing about any basic changes in the policy of public sector driven industrialization and protectionism. A major development that took place during the third period, however, was the beginning of a comprehensive programme of rural works with the objective of generating additional employment opportunities and utilizing the large reserve of rural labor force for accelerating the process of economic development.

Fourth Plan (1969-74) : By 1970, a disinct change in the thinking of planner was clearly discernible. As a result of the pioneering study of V.M.Dandekar and N. Rath[4], Poverty in india in 1971 and the follow-up discussions in which a number of economists participated, the conviction grew strong that poverty and misery were widespread in India and there was an urgent need to take account of this problem in plan exercises.The study revealed that more than 40% of the population was unable to achieve even the minimum necessary level of subsistence and thus called for a drastic revision of plan priorities and programes (Box1).

Box1

Earlier phase programmes

The strategy of direct assault on poverty through rural development and rural employment programs was first adopted in the 1970s With the fifth plan, poverty alleviation came to be accepted as one of the principal objectives of economic planning. During 1970s a number of special programme for the rural poor were undertaken of which the important ones were:

- Small Farmers' Development Agency
- Marginal Farmers' and Agricultural Labourers' Development Agency (MFAL)
- Drought-Prone Areas Programme (DPAP)
- Cash Scheme for Rural Employment (CSRE)
- Pilot Intensive Rural Employment Project (PIREP)
- Food for Work Programme (FWP)

The Fifth Plan (1974-79) talked of a redistridutive scheme aiming at bringing down the per capita consumption level of the richest 30% of population so that the lowest 30% of population could be guaranteed a minimum level of subsistence. The important objectives were by the final year of the Fifth Plan, proverty should be removed in the sense that practically nobody should have lower consumption level. Inequality of distribution of consumption should be reduced. Target for aggressive consumption should be set for the final year of the plan in such a way as to be compatible with the above 2 objectives. Other macro-economic targets for the final year of the final year of the plan should be set in agreement with the target for aggregate consumption. A production structure at the disaggregate level should be worked out so as to permit the realization of the macroeconomic objectives. Some programmes were undertaken by the government to alleviate poverty (Box2).

No definite strategy was enunciated to carry out the actual process of transfer of income to the poor. It was also not specified how the incidence of the cut proposed on 30% upper strata of society was to be distributed among them. Because of the difficulties involved in tackling these problems and on account of the lack of political will and courage to actually carry out the scheme, the Draft Fifth Plan abandoned the exercise. Though the importance of redistribution was stressed, the policy measures did not envisage any radical or bold redistributive scheme.

Box 2

Poverty Alleviation Programmes (1974-79)

The integrated Rural Development Programmes(IRDP) - initially started in 1978-79 in 2300 development block as a programme of total development.

The National Rural Employment Programme (NREP) and the Rural Landless Employment Guarantee Programme (RLEGP) - launched during the 6th plan with the objective of helping that segment of population that depended largely on wage employment and had virtually no source of income during the lean agricultural period.

The Sixth Plan (1980-85) was formulated against the background of a prespective covering a period of 15 years from 1980-81 to 1994-95. This development perspective visualized accelerated progress towards the removal of poverty, generation of gainful employment and technological and economic self-reliance.

Benefits of such achievements do not percolate downwards to the masses of people who continue to remain poor. On account of this reason the development strategy incorporated some specific action programmes like the National Rural Employment Programme (NREP) and some other anti-poverty measures.

The Seventh Plan (1985-90) aimed at ensuring desired results from investments in the infrastructure development. This was expected to remove an important constraint on growth in the primary and secondary sectors. The long-term development strategy accorded the highest priority in creation of opportunities for productive employment for a continuously growing labour force. This plan stresses on growth, modernization, self-reliance, employment and social justice. In this plan employment was treated as a direct focal point of policy. They, however, assereted that "employment can be sustained only if it is productive and ads to output and income on a continuing basis.

At the end of the seventh five year plan, India became part of the global economy and underwent economic reform. In the process, India has emerged as the fourth largest economy in the world.

The Eight plan (1992-97) had the objective of eliminating poverty as a major concern of development planning. Expansion of employment opportunities, augmentation of productivity and income levels of both the underemployed and employed poor would be the main instument for achieving this objective. The Plan was another important landmark in the development strategy when the limitation of an income and commodity-centric notion of poverty and human well-being was recognized. In line with Prof. Amartya Sen's celebrated work 'Development as a Freedom', poverty came to be recognized as not simply "a state of low income or consumption" but as the lack of freedom of a person to choose and live the life she has reasons to value. The notion of freedom to choose and live brought to the fore the process aspect to development opportunities. This recognition of the multifaceted nature of poverty generated an urge among the policymakers for complementing poverty alleviation strategy with special programmes for building up the capabilities of the poor and the disadvantaged. The decade of the nineties brought the notion of sustainable development to the fore and influenced the planning and policy spheres in addressing the conflicts between growth-promoting policies and degradation of the environment and their implications for the livelihood of the poor.

The Ninth plan (1997-2002) focused on the "Growth with Social Justice and Equity". The objectives taken by the government for poverty alleviation and employment generation were priority to agriculture and rural development with a view to generating adequate productive employment and eradication of proverty, ensuring food security for all, particularly the vulnerable sections of society, providing the basic human services of safe drinking water, primary health care facilities, universal primary education, shelter and connectivety to all in a time bound manner, promoting and developing people's participatory institutions like Panchayati Raj Institutions, cooperatives and self-help groups.

Therefore the development strategy of the State in the ninth plan focused on creating the necessary economic and social infrastructure to ensure the unhindered operations of the private sector.

The Tenth Plan period (2002-07) observed a healthy transformation in the policy sphere with the emergence of a more vibrant civil society and media and the evolution of a more dynamic and sensible judiciary. These developments accompanied by social mobilization has prompted the Supreme Court of India to issue a series of directives to the governments at the centre and the states to allocate adequate resources, ensure people's participation in implemention and monitoring of poverty alleviation programmes, use excess food stocks to run Food For Work (FFW) schemes in drought affected states and serve cooked mid-day meals to primary school childern. One of the main targets of this plan was the reduction of poverty to 21% by 2007 and poverty ratio by 5% points. According to the tenth plan, "effective implementation of anti-poverty programmes would be central to achieving the planned reduction in poverty. The challenge before the state is to provide employment opportunities which provide enhanced incomes. This becomes more important in the view of the fact that substantial additions to labour force are expected in the next five years".

Different poverty alleviation Programmes have been taken up targeting section of the poor. Not only that some programmes have taken up for the development of infrastucture for long term benefit. Some of those are as follows :

Poverty Alleviation Programmes

Sampoorna Gramin Rozgar Yojana or SGRY has the three-fold objectives generation of employment for the rural poor, creation of community assets and infrasture, and ensuring food and nutrition securing food and nutrition through for the rural poor.

The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) is a job guarantee scheme, enacted by legislation on August 25, 2005. The scheme provides a legal guarantee for one hundred days of employment in every financial year to adult members of any rural household willing to do public work-related unskilled manual work at the statutory minimum wage of Rs. 120 (US$2.68) per day in 2009 prices.

Pradhan Mantri Gramodaya Yojana (PMGY)

- It was introduced in 2000-2001 with the objective.of focusign on village level develoment in five critical areas, i.e., Primary Health, Primary Education, Housing, Rural Roads and

Drinking Water and Nutrition with the overall objective of improving the quality of life of people in rural areas. Rural electrification was added as an additional component from 2001-2002.

- It has the following components.

Pradhan Mantri Gram Sadak Yojana (PMRY)-It was launched on December 25, 2000 with the objective of providing road connectivity through good all weather roads to all rural habitations with a population of more than 1000 persons by the Year 2003 and those with a population of more than 500 persons by the Year 2007.

Pradhan Mantri Gramodaya Yojana (Gramin Awas)- Launched on April 1, 2000. Based on the pattern of Indira Awas Yojana, the scheme is being implemented in the rural areas throughout the country with the objective of sustainable habitat development.

Antyodaya Anna Yojana (AAY)-The AAY commenced in the year 2001 to provide food security to the poorest of the poor.

Indira Awas Yojana (IAY)-Major Scheme for construction of houses to be given to the poor, free of cost.

Swarnajyayanti Gram Swarozgar Yojana (SGSY)-lanuched in 2001, aims at :

1. Providing wage employment in rural areas
2. Food security
3. Creation of durable community, social & economic assets.

Employment Assurance Scheme & Jawahar Gram Sammridhi Yojana were merged since April, 2002.

Food for Work Programe (FFW)- launched in November 2004 in 150 backward districts of the country with the objective of providing more opportunities of wage employment & ensuring certain minimum nutritional levels for rural poor.

Valmiki Ambedkar Awas Yojana (VAAY)- launched in 2001 to facilitate the construction and up gradation of dwelling units for the slum dwellers and provides a healthy and enabling urban environment through community toilets.

The Swaran Jayanti Shahkari Rozgar Yojana (SJSRY)-came into operation from December, 1997 submerging the three earlier urban poverty alleviation programmes viz. Nehru Rozgar Yojana Urban Basic Services Programmes & Prime Minister Integrated Urban Poverty Eradication Programme. This programme seeks to provide employment to the urban unemployed or under employed poor by encouraging the setting up of self-employment ventures or provisions of wage employment.

Eleventh Five Year Plan (2007-2012) : The objective was to reduce the ratio of poverty by 10% points over the plan period or 2% points per year which is more than twice the pace observed in the past. The Approach Paper to the Eleventh Plan states "The strategy of accelerated growth incorporating a near doubling of the rate of growth of agriculture can be expected to reduce poverty further especially if we can achieve a steady expansion in schemes aimed at supporting incomes and welfare of the poorer sections e.g. National Rural Employment Guarantee, Bharat Nirman, Sarva Shikha Abhiyan, the Mid Day Meals Scheme and the National Health Mission. It must be emphasized that rapid growth is important not only because it will generate income earning opportunities for the poor, it will also generate the growth in tax revenues needed to finance various anti-poverty programmes. The combined effect can hepl to reduce poverty significantly." It is not possible to measure progress against this target at this stage because no official estimates of poverty are available after 2004-05.

The next estimate of proverty will be for the year 2009-10 on the NSS survey currently being conducted in the field.

AN APPRAISAL OF THE PROGRAMMES

From the above discussion it is clear that India's strategy for development with social justive during the first two decades of planning consisted primarily of two instruments which were: (a) economic growth with balanced regional development; and (b) institutional changes to remove some sociocultural constraints in accessing development oportunities. The implicit assumption behind the choice of these insturments was that if they perform well then the fruits of planned development would '*trickle down*' to the masses. Unfortunately, in the early 1960s itself, the Indian planners began to face serious criticism as the contemporary empirical evidences revealed that the fruits of development had not percolated down to the masses and there were a large number of deprived and deserving communities whose basic needs remained unmet. As a response to this criticism, the Planning Commission came out with a paper in 1962 titled, 'Perspectives of Development : 1961-1976; Implication of Planning for a Minimum Level of Living'. The paper suggested that a GDP growth rate target of 6 percent per year, accompanied by a stable distribution, would facilitate broad based importance of distributional policies and considered it necessary to have targeted programmes for employment generation and income support for those who had been left out of the benefits of the growth process. Thus, in the last four decades a number of such programmes have been and still are being carried out in this country.

These programmes more or less had succeeded in curbing the poverty and generating employment.

ESTIMATES OF POVERTY

The estimates of incidence of poverty in the country expressed as the percentage of population and the number of poor at the All India level and at the rural and urban levels is given in Table 1.

There has been a decline in the poverty ratio since 1973-74. The decline was modest until 1993-94, by about one percentage point annually. However, this reduction was unable to effect a reduction in the number of poor during this period (1973-74 to 1993-94) due to higher rate of population growth. The number of poor during this period remained stable at around 320 million. The decline between 1993-94 and 1999-2000 is; however, sharp about 10% education in the poverty ratio along with significant reduction in number of poor. However, there is still high concentration of the poor in the rural areas as 193 million poor live in the rural areas which is about three fourth of the total poor in the country (estimated at 260 million for 1999-2000).

Table 1 : Estimates of Incidence of Poverty in India

Year	All India		Rural		Urban	
	Number (million)	Poverty Ratio (%)	Number (million)	Poverty Ratio (%)	Number (million)	Poverty Ratio (%)
1973-74	321	54.9	261	56.4	60	49.0
1977-78	329	51.3	264	53.1	65	45.2
1983	323	44.5	252	45.7	71	40.8
1987-88	307	38.9	232	39.1	75	38.2
1993-94	320	36.0	244	37.3	76	32.4
1999-2000	260	26.1	193	27.1	67	23.6

Source : INDIA'S POVERTY ALLEVIATION PROGRAMMES, Rohini Nayyar, Adviser, Rural Development, Planning Commission, New Delhi, 2006

EMPLOYMENT SCENARIO

The estimated number of unemployed persons for the year 2001-02 i.e. the base year of the Tenth Plan is around 34.85 million person (defined on CDS basis) while the unemployment rate is around 9.21 per cent. Estimates show that the unorganized sector has the highest labour content of output with high employment elasticity whereas the organized private sector has the lowest. The public sector (belonging exclusively in the organized sector), which was a major employment provider in the past, has recently by heavy shedding of excess labour and has become the lowest potential employment generator. The growth strategy of the Tenth Plan lays emphasis on rapid growth of those sectors which are most likely to create high quality employment opportunities and deals with the policy constraints which discourage growth of employment. Particular attention has been paid to the creation of a policy environment to influence the wide range of economic activities which have a large employment potential. The Tenth Plan identifies many labour intensive sectors like agriculture and Allied Activities, Food Processing, Rural Non-farm Sector including Khadi and Village Industries, Small and Medium Enterprises and Services sectors including Health, Education, Information Technology Communication where employment generating growth can be rejuvenated if right kind of sectoral policies are put in place.

Table 2 : Employment in Organized and Unorganized Sectors

Sector	Employment (Million)			Growth Rate (per cent per annum)	
	1983	1994	1999-2000	1983-94	1994-2000
Total employment	302.75	374.45	397.00	2.04	0.98
Organized Sector Employment	24.01	27.37	28.11	1.20	0.53
Public Sector	16.46	19.44	19.41	1.52	-0.03
Private Sector	7.55	7.93	8.70	0.45	1.87
Unorganized Sector Employment	278.7	347.08	368.89	2.01	1.02

Source : Government of India, Ministry of Finance, Economic Survey 2001-02, Table 10.7, p.240

The long term perspective for employment generation highlights that a higher overall growth of the economy is necessary to increase the labour demand, necessary for absorption of additions to labour force and for improvement in the quality of existing employment, pursuing appropriate sectoral policies in individual sectors which are particularly important for employment generation. These sector level policies must be broadly consistent with overall objective of accelerating GDP growth. Implementing focused special programme for creating additional employment and enhaning income generation from existing activities, aimed at helping vulnerable groups that may not be sufficiently benefited by the more general growth promoting policies. Pursuring suitable policies for education and skill development which would upgrade the quality of labour force and make it capable of supporting a growth process that can generate high quality employment. If the policies are properly implemented and there is a legal environment that governs the labour market then it encourages labour absorption, especially in organized sector.

It is therefore clear that while the programmes taken so far did bring in prosperity to the country, the benefits are not evenly distributed and some are even deprived of the benefits. It is also pertinent to understand that some of them are unable to be part of the economic reform and do not have the capacity to participate in the economic development process. Such groups need government intervention to ensure that they are not left behind in the development process and deprived of the benefits because they do not have the capacity to be part of the global economy. The government needs to develop safety nets for such groups and try to mainstream them in the development process. They need welfare measures in the form of poverty alleviation programmes to ensure that they survive if not prosper in this era of economic reform. Further, the poor are not a homogeneous population and their capacity to survive the economic reform varied from one group of poor to another. Especially, those who are below the poverty line or the poorest among the poor need more government help.

POLICY IMPLICATIONS AND CONCLUSIONS

The study has revealed that the policies taken so far have succeeded but it has not reached up to expected level. Thus on the basis of the study the following policies are spelt out :

First, the population of India as estimated by the Sixth Census, 2011 is 121 crores and is growing at the same pace or even more. As we know the rural people has higher rate of fertility and all these measures are meant mainly for the rural people. For reaching our goal of poverty alleviation, the population control measures should be taken. The NGOs have to be involved in educating the poor about the various population control devices and their uses.

Second, the failure of the trickle-down effect made the planners to think differently, i.e., the planners for the first time explicitly recognized the importance of distributional policies and considered it necessary to have targeted programmes for employment generation and income support for those who had been left out of the benefits of the growth process. The effective strategy in this case should be acting at the grass root level; in the rural areas the PRIs are given certain powers to act against thre problems faced by the people and in the urban ares the Municipal Corporations. Poverty alleviation and employment generation schemes has to be made in consultation with the people actually affected through these institutions, this may differ from place to place, if done properly needs of all will be catered to.

Third, since we have observed that 75% of the poor reside in rural areas the creation of employment opportunities for the unskilled workforce in India is a major challenge for planners. Various anti poverty and employment generating programmes were introduced but some of these failed due to their improper implementation.

Fourth, the government has structured the public distributing system to distribute necessary commodities to the poor at fair price. But BPL ration card holders regularly denied full quota of ration from PDS shops. A strong vigilance committee must be formed to look after this matter.

Fifth,education and health are the dual capital of the human being. For the upliftment of the poor, education must be given to them. If health is not taken care of, then what's the use of education? In the Tenth Plan, some measures have been taken which is continuting in the present plan period, must be continued in the Twelfth Plan period. The measures include:

- All children in school- 'Sharva Shikha Abhiyan' - education for all.
- Midday meal schemes- so that children who come for education can also have nourishment.
- National Rural Health Mission- to look after the health of the rural poor. More emphasis must be given to the infant mortality rate and maternal mortality rate.
- Proper implementation of the Integrated Child Development Scheme (ICDS), launched in early 1975.

This paper has made an attempt to address a part of the poverty situation prevailing in India. But there are some other aspects which need to be studied further. Nevertheless, one strongly feels that if some of the policies mentioned above are taken up and implemented properly by the government then India can be a better place to live in.

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NOTES

1. According to the definition given by Ragnar Nurkse, the vicious circle of poverty implies a circular constellation of forces tending to act and react upon one another in such a way as to keep a poor country in a state of poverty
2. It defines poverty line, Tenth five year plan 2002-07, chapter 3.2
3. For more details see S.K. Misra and V.M.Puri(2011): India Economy
4. For more details see V.M.Dandekar and Nilikantha Rath (1971) : Poverty in india

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> ...it tended to give the impression that *all* policies suffered under the same implementation problems ...however, it became clear 'different problems in implementation'(Quick, 1980: 40-41).

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Personal Communications

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