Journal of Social Welfare and Management

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Journal of
Social Welfare and Management

Oct -Dec 2012; Volume 4 Number 4

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Coping With Spousal Suicide
(A Sociological Study of Widows of Farmers' Suicides in Karnataka)

A. N. Gayathri*, Amarnath R. Das**

Abstract

The growing incidence of farmers all over the country has shattered the farmers' households. Piled up debt, erratic and insufficient monsoon burden of the family, farming have fallen on the shoulders of the widows of farmers who had committed suicide. India being an agricultural nation and its commitment being welfare state cannot afford to lose one lakh farmers every year. It is of importance to see as to how these widows cope up the tragedy befallen on their families. Are they reeling under pressure of the farm and the family? or are they also likely to follow their spouses in ending a hapless life?, Whether or not they able to bail out themselves and their families from the distress is examined in this paper.

Key words:

Farmers' Suicide: The self inflicted deaths willfully carried out by the farmers, due to the debt burden and the loss of self esteem.

Coping: The ability to bear the tragic death of their spouse as a widow and efforts put in to bail out themselves and their families from the distress.

Introduction

Suicide is a human act self inflicted, self intentioned and untimely cessation of life. Suicide has emerged as an increasing public health problem in India over the last two decades, highlighted especially by the rise of male youth suicide rates in rural areas. According to National Crime Records Bureau's latest statistics, 1.22lakh suicides every year in India and Maharashtra tops among all other states of India.

According to National Crime Records Bureau, between1997-2007, 1, 82,936 farmers have committed suicides in India. During 1999- 2001, it was estimated that 110 farmers committed suicide in Karnataka. According to one estimate, 3,000 farmers committed suicide in Karnataka between 1998 and 2006 (Muzzaffar Assadi: 1998 & 2005). If we take the report prepared by the Crime Branch of Karnataka, the number of suicide under the heading "farming and agricultural activity" comes to 15804 between 1998 and 2002. The year 2000 saw the maximum number of suicides 2630 followed by year 2001; these are the years when agriculture saw the negative growth. Interestingly, as per the crime branch report, between 1996 and 2002, 12889 male farmers and 2841 female farmers committed suicide.

The suicides of the farmers, has posed severe challenge to the governments. The interventions brought in were aiming to provide relief to the families of the farmers, who had committed suicide. The implications of the suicides of the farmers do not end with that. It is of vital sociological interest to know, as to how these households are trying to cope up with the suicides of their bread winners? Was the relief provided adequate enough? The Widows of the farmers are now a disadvantaged group with indebtedness and the social stigma of widowhood. How do these women cope up to wriggle out of the socio

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(Received on 25.01.2012, accepted on 12.02.2012)

economic and psychological distress, is to be examined so as to stem the rot.

Widowhood is a phase of cruel experience for a woman in Indian society. With a single stroke of death of her spouse, she becomes a symbol of anathema. In the same family she becomes an unwanted creature relegated to the background, bereft of all social interactions. Mentally she has to overcome the grief of loss of companionship more than any one in the family. She has to assume the obligations and expectations of the role of bread winner besides the crucial role of mother for her children.

Her very presence is considered as inauspicious. According to Hindu Dharma Shastras, the widows are forbidden from using Sindoor and Bindi, bangles, nose -ring and Mangalasutra. Some women were forced even to tonsure their head. She must wear white sari only. Adding to her owes, she is isolated from the public life. She should not laugh or even talk loudly. Moreover she should not speak with outsiders. Most of the widows suffer from one form or the other form of social discrimination the widow is in young age her plight in life is unimaginable. In short she is socially excluded. The woman's status is at once transformed to a status of a widow, symbolizing exclusion and disability because of so many restrictions imposed on her. This is more so in rural society, where she has to undergo the restricted life, with so many obligations to fulfill and it is a life most miserable for a woman. This becomes much more severe, when she has to manage the debt ridden agriculture besides the familial responsibilities.

The specific objectives of the present research paper are

1) To portray the socio- economic profile of the widows of farmers Suicides in Karnataka with special reference to Tumkur, Chithradurga and Davanagere districts of Bangalore division of Karnataka State during the period 2001-07.
2) To know how do these widows cope with the distress of the suicides of their spouses and also the economic distress befallen on their families.

Method of Study

This paper is based on a study on 227 Farmers who committed suicides during the years 2001-2007 in Chithradurga, Davanagere and Tumkur district of Karnataka.

Findings and Discussion

It was sad to find that about 64.76 per cent of the farmers wives have become widows before they were 35 years of age, thus indicating the marital, mental and physical depravity experience in their lives. Widowhood is a painful emotional shock, a sharp change in social status, often an economic catastrophe and usually an introspective challenge to the widow. It also leads to the loss of prestige resulting in a state of helplessness and a state of alienation. The age at which the respondents became widows shows that 25.56 per cent of the respondents attaining the widowhood in their age between 25 to 30 years, 23 .78 per cent of them becoming widows between 30 to 35 years. Other 14.97 per cent of the respondents attained widowhood in the age between 20 to 25 years. Above 14.09 per cent of them were attaining in widowhood between 35 to 40 years. Half of the respondents became widows in their young age. After the death of her husband they have to face more restrictions at each and every step of their lives.

The economic distress for the families of the farmers' suicide in the form of debts revealed that 81.06 per cent of the respondents had debts of less than 1 lakh. Nearly 16.29 per cent of the respondent's debts are in the range of 1 to 2 lakhs. Only 2.65 per cent of the respondents had debts of more than 2 lakhs mostly borrowed from private money lenders. Analyzing the data on debts accumulated

Most of the farmers had borrowed money to invest on agriculture to buy inputs like seeds fertilizers and pesticides with the nope of raising a good crop. But the failure of monsoons in consecutive years, depleting ground water level, drying up of bore wells, use of spurious seeds, pesticides could not give them good crop for the two or three years. dashed their hopes driving them into more debts resulting in a psychic state of depression. In the absence of institutional credit, the respondents have started borrowing from private money lenders even to manage even regular family expenses. When the creditors came to collect the dues the farmers had to cut a sorry figure the abuse of the moneylenders and when they tried to seize the cattle and the property of the farmers the hapless farmers could not bear the shame and the loss of self esteem which they enjoyed earlier. Though the amount of debt was not much the erosion of the social esteem weighed high in their mind driving the farmers to desperation to end their lives.

As part of coping up with the predicament forced on the widows of farmers by the suicides of their spouses, 51.54 per cent of respondents have taken up augmenting the incomes of their families through poultry, dairying, petty shops and farm labour etc and could raise amounts to clear part of the debts**.** Indebtedness had engulfed the households of the farmers and the respondents wanted to clear off the debts at the earliest. As the farmers relied excessively on agriculture alone they were never in a position to repay the debts. Caught in the midst of the storm, the respondents dared to accept the total responsibility of both the family and the farm. But the widows of the farmers never wanted to remain 'cog in the wheel' as his late husband used to be. Instead, her goal or objective in life decided, efforts initiated in the right direction, to bail out the family from the crisis with determination at its peak, these women demonstrated utmost firmness and steadfast resolve not to buckle under pressure but tried their best to cope with the crisis effectively not swerving from the path of recovery.

It is heartening to observe that 43.17 per cent of the respondents have repaid debts ranging between Rs 25,000 to 75,000. About 56.83 per cent of the respondents have successfully repaid the debts below Rs 25,000 each .Of the widows, 43.17 per cent of the respondents have repaid debts in the range between Rs 25,000 to Rs.75000 each. These have been successfully repaid by the respondents. Taking moral responsibility, they are toiling 'in' and 'out' of the family and within a short span they have almost repaid the debts successfully.

It was found that in 57.27 per cent of the families, it was the respondents, who are managing the family and agricultural activities. In 32.59 per cent respondents' families, the eldest child managed the family activities. Only in 10.14 per cent of the respondent's families the brothers of spouses or their parents were found to be managing agriculture and the families of the widows. The widows have the say in the management of farm and family in most of the cases**.** Nearly 10.14 per cent of the respondents families were managed by the brothers or parents of the victim. More than half of the families are managed by the respondents. About one fifth of the families are managed by the eldest issues.

Following the suicides of their father, only in about 9.69 per cent of families, children dropped out from studies, while in 90.31 per cent of the families, children continued their education. Widowhood, and the economic vulnerabilities that are often associated with it, undoubtedly have an influence on the well-being of the children of widows. Since a widow often has to turn to her children's labour as a source of economic support, the children of widows are likely to enter the workforce and withdraw from schooling at an earlier age than that of the children of married women. 90.31 per cent of the children continued their education. Even though it was very difficult for them to spend on educating of their children they were keen on sending them to school. It can be inferred that they have considered education as a weapon

that could help in over powering all their problems.

Around 41.85 per cent of the respondents received moral support from their relatives. Nearly 18.50 per cent of the respondents owed the moral support to their parents. In 18.06 per cent of the cases the roots of moral support was in the friends. About 8.37 per cent of the respondents had the NGOs as moral supporters. The widows do have support from various quarters which made them to cope up with suicides of their spouses. About one third of the respondents got relief from the government and the same was utilized to clear off the debts. One fifth of the respondents were assisted by the friends and relatives. Almost all the respondents have received assistance from one source or the other. Be it the government or the NGOs who have provided training in self employment schemes like tailoring, embroidery have successfully transformed the respondents into self reliant and a confident lot. The friends and relatives have also contributed their mite in assisting the helpless respondents. Thus, the support that one receives from the society and their beloved one goes a long way in reinforcing the confidence of the widows to face the exigency boldly and bail out their families from the distress.

About 64.75of the respondents got relief from the government and the same was utilized to clear off the debts. 18.50 of the respondents were assisted by the friends and relatives. There are around 31.3 per cent of respondents who feel clearing off the debts as their burning problem while about 27.3 per cent opined continuing the education of their children as their major problem. For about 13.7 per cent of widows, continuing of

Table No 1: Distribution of respondents by Age at Widowhood

Sl. No	Age at widowhood	No. of respondents	Per cent
1	< 20 years	3	1.34
2	20 to 25 years	32	14.09
3	25 to 30 years	58	25.56
4	30 to 35 years	54	23.78
5	35 to 40 years	34	14.97
6	40 > years	46	20.26
	Total	227	100.00

Table 2: Distribution of the respondents based on the debts accumulated

Sl. No.	Accumulation	No. of respondents	Percent
1	< Rs.1 lakh	184	81.06
2	1 Lakh- 2 lakhs	37	16.29
3	Rs.2Lakhs >	6	2.65
	Total	227	100.0

Table 3: Distribution of respondents by the allied means of livelihood

Sl. No.	Other means of Livelihood	No. of respondents	Percent
1	Dairying	53	23.35
2	Poultry	31	13.65
3	Small shop	11	4.85
4	Daily wage labour	22	9.69
5	No subsidiary Activity	110	48.46
	Total	227	100.00

Table 4: Distribution of the respondents as to how much debt they have cleared

Sl. No.	Debts able to Clear	No. of respondents	Percent
1	< 25000	129	56.83
2	25,000 to 75,000	98	43.17
	Total	227	100.00

Table 5: Distribution of respondents about who manages the family after him

Sl. No.	Person	No. of respondents	Percent
1	Self	130	57.27
2	Eldest Child	74	32.59
3	Husband's brother	12	5.29
4	Husband's Parents	11	4.85
	Total	227	100.0

Table 6: Distribution of respondents as to whether the children dropped out of education

Sl.No	Dropped out	No. of respondents	Percent
1	Yes	22	9.69
2	No	205	90.31
	Total	227	100.00

agriculture as the major problem and for about 23.3 per cent of respondents, burning problems revolved around social obligations such as girls' marriage, death ceremonies and family responsibilities as the problems looming large before them. Poverty being the bane of the majority of the respondents, the burning problems encircled around uncleared debts. Unable to repay the debts the farmers were branded as 'defaulters' by the money lenders. After being humiliated by the money lenders the farmers suffered loss of social prestige and

Table 7: Distribution of respondents based on the source of Assistance received

Sl. No.	Source of Assistance	No. of respondents	Percent
1	Govt.	147	64.75
2	NGOs	19	8.37
3	Relatives	42	18.50
4	Friends	16	7.05
5	Other	3	1.33
	Total	227	100.00

Table 8: Distribution of respondents by their current problems

Sl. No.	Problem	No. of respondents	Percent
1	Children' education	62	27.3
2	To clear off debts	71	31.3
3	Agricultural maintenance	31	13.7
4	Health	10	4.4
5	Others	53	23.3
	Total	227	100.0

Table 9: Distribution of respondents based on the membership of Self Help Group

Sl. No.	Membership in SHGs Self Help Group	No. of respondents	Percent
1	Yes	130	57.26
2	No	97	42.74
	Total	227	100.00

Table 10: Distribution of respondents about their level of confidence

Sl. No.	Confidence	No. of respondents	Percent
1	Very Confident	60	26.44
2	Confident	91	40.08
3	Some what	76	33.48
	Total	227	100.00

sacrificed their lives. The responsibility of repaying the debts was thus transferred to the respondents. After this incident the prestige of the family was at stake. Hence in order to regain the prestige the respondents admitted repaying the uncleared debts as their burning problem. Finally even amidst grinding poverty some of the orthodox respondents wanted to celebrate a few occasions and ceremonies. Dearth of financial resources came in the way of arranging these. The unpleasant feelings made them admit that the major problem in life is arranging and celebrating occasions.

As revealed in the about 57.26 per cent of respondents had taken the membership of SHGs and tried to repay debts. SHGs can act to provide social cohesion and a sort of support to families of farmers' suicides to augment the financial position of their families. The SHGs have come to the rescue of these women in their effort to bail out their families. Emile Durkheim too advocates that group is an insurance against the suicidal tendencies. He advocates forming of occupational guilds which can reinforce solidarity among people and can insulate them against suicidal tide, when distresses befall them. The presence and their membership in SHG has acted as a moral

support to these women. This has further given a fillip to their confidence.

Suitable policy interventions

- Organization of Farmer' Guilds to bring all farmers into a fold to educate them about the farming, management of resources particularly water resources and marketing strategies. This guild is to be the nodal link between the farmers and the government. India being agrarian economy this major initiative would insulate the farming community against any distress and also embolden them to face crisis of any sort.
- The state should encourage co-operative farming strengthening flow of credit through co-operative farming and the co-operative credit system collapsed in most of the districts in the state should be revived.
- Form Self help groups for wives of farmers and also widows of farmers to shield them against alienation and suicide.
- Easy accessibility to institutional credit at low rates of interest with quick and liberalized processing.
- Provide over all compulsory Farm insurance.
- Making DWAMA to advice farmers on water management and the judicious use of water and advice at times of identifying points for bore well.
- Government should make cloud seeding as a permanent programme for drought prone areas.
- For a sustainable development of rural poor non-land based agro-processing activities to be encouraged and financed to generate additional income for the farmers.
- The NGOs to be encouraged to launch programmes for farmers in sensitization, educational and counseling programmes, particularly for the susceptible community of Farmers in rural areas to cope up with crisis and also imbibe self confidence.

Conclusion

The widows of farmers' suicide in the three, the districts Karnataka, have been widows for about nine years. Though the suicide deaths of their spouses came as a rude shock shattering their lives, they could come out of the grief, cope with the economic and emotional distress befallen on them. Their coping up behavior reveals that most of them have assumed total management of family and farm with the support of their children and the emotional, moral support extended by their relatives. Most of them judiciously repaid part of the debts with the relief got from the government and they have augmented the families' income through taking up allied activities and sizable portion of them have joined Self Help Groups, which could imbibe confidence, capacity building to face problems boldly. Hailing from rural families, with poor literacy levels, amidst the insurmountable crises and distress, these widows have exhibited remarkable resolve to swim against the current to bail out themselves and their families and brim with confidence to tell that they are 'Women of substance'. The government if only it initiates new policy interventions mentioned above the tragedy of farmers suicides can be averted and those who had become widows also can be insulated against any possible suicide attempts.

References

1. Adinarayana Reddy P. *Problems of Widows*. New Delhi: Sarap and Sons Publications; 2004.
2. Fritz, M.A. A Study of Widowhood in Sociology & Social Research. *Yojana* 1979; XIV.
3. Jean Dreze and PV Srinivasan. *Widowhood and Poverty in Rural India: some inferences from Household survey data*. New Delhi: Sage Publications; 1998.

4. Padmanbhan K. *Economic Status of Widows*. New Delhi: Serials Publications; 2006.
5. Parthasarathy K and S Jayalakshmi. *Status of Widowhood*. New Delhi: Sarap and Sons Publications; 2004.
6. Shankar R, et al. *Widows in Rural Setting- A sociological Study*. New Delhi: Sarap and Sons Publications; 2004.
7. Assadi, Muzaffer. Farmers' Suicides: Signs of Distress in Rural Economy. *Economic and Political Weekly* 1998; 33(13).
8. Vidyasagar R and Suman Chandra K. Farmers' Suicides in Andhra Pradesh and Karnataka. *Report of National Institute of Rural Development*. Hyderabad. 2004.
9. Bhat KS *et al*. *Tillers in Distress*: A Pilot Study on Farmers Suicides in Andhra Pradesh. Hyderabad: Allied Publishers Private Limited; 2006.

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Journal of Social Welfare and Management
Volume 4 Number 4, Oct - Dec 2012

Inclusive Development of the Backward Classes Through Higher Education

(A Study on Backward Class Students Enrolled in Engineering and Medical Courses in Anantapur, A.P.)

K.V. Amarnath*, Amarnath R. Das**

Abstract

Post Independent India tried to uplift the disadvantaged sections through the inclusive policy of reservation, in education and occupation, so as to enable them to catch up with the main stream society. It is almost five decades since the provision of reservations and welfare inputs to the backward classes in all the states. What is the impact of these welfare inputs? Whether or not these backward classes made use of these reservations and inputs to scale higher education more so in engineering and medical streams of professional education? Whether or not the inclusive policy of reservation resulted in ushering of equality of opportunity in education and subsequently their social empowerment on a scale of social parity is being examined in this paper.

Key Words:

Backward classes: The artisan and castes who ranked just above the so called untouchables in the caste hierarchy and rendered services to other castes.

Professional Education: The higher education, specializing in the streams of engineering and medicine, which are ranked as premier in the country.

Introduction

Inequality of power and advantage has been an extremely common feature of human societies, even if the degree of inequality has varied greatly. It is not, however, something which is randomly distributed between individuals in society. Members of a given group will have features in common and if they are in a superior position they will usually see that their unequal position is passed on to their children.

Social stratification of Indian society was on the dimension of caste inequality signifying social exclusion and marginalization of many a social group in the lines of purity and pollution. The twice born castes enjoyed social honor, power and economic viability, all other groups were to made be subservient in this form of ascribed social positioning and concomitant social status and Jajmanic social obligations. The so called 'Harijans' occupied the lowest rung outside the caste hierarchy, the artisan castes subsequently came to be called as the backward classes or communities practicing the traditional service occupations such as Dhobies, Barbers, Shepherds, Potters, Goldsmiths and Iron smiths, Carpenters etc. These occupations were not ranked a defiling and polluting, as in the case of Dalits, yet these Backward Classes were deprived of social position, honor and power and were made to occupy the caste ladder just above the untouchables.

Society is divided into a patterned structure of unequal groups, and this structure tends to persist across generations. The actual nature of these groups and the relationships between them vary enormously.

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(Received on 25.01.2012, accepted on 11.02.2012)

In a caste based stratification system as in the case of traditional India an individual's position totally depends on those status attributes ascribed by birth rather than on any which are achieved during the course of one's life. The social position into which an individual is born here is the one in which, theoretically, he is bound to remain for the rest of his life. In reality, individuals, families and even groups can change position, although it is far from usual Thus, in a class society members typically believe that mobility is easily available and secured on merit. Though this is demonstrated to be largely illusory in practice, this belief still contrasts with that underlying caste inequality.

In traditional India different castes formed a hierarchy of social precedence. Each position in the caste structure was defined in terms of in purity or pollution relative to others, whilst those who are least pure – i.e. the Panchamas, sometimes called the 'out castes' or 'Untouchables' – are inferior to all other castes. In The traditional system is generally conceptualized in terms of the four-fold Varnas, which in addition to the Brahmins at the top included the Kshatriyas, or warriors, the Vaishyas, or traders, and the Shudras, or servants and labourers, in that order. Thus, in a class society members typically believe that mobility is easily available and secured on merit. Though this is demonstrated to be largely illusory in practice, this belief still contrasts with that underlying caste inequality.

The Panchamas were outside the caste plane and, as such, they were considered to be inferior to even Shudras. As a matter of fact, however, only the top and bottom of the hierarchy, namely, the Brahmins and the Panchamas, are relatively fixed. And, there are innumerable occupation-based caste groups, called Jatis, in the middle range whose mutual position allows room for considerable debate.

Social stratification is, as we have seen, structured inequality in society, such that some strata have more power and reward than others. In many societies this has been an avowed and recognized feature of social organization – acknowledged and (usually) justified both by those who benefit and those who are disadvantaged. Normally in such societies – for example, in the form of castes or feudal estates- social positions are defined and fixed by birth. Unequal power or benefit is inherited – ascribed – and in theory this position cannot be changed by the efforts of the occupant of such a stratum. However good, however servile, the untouchables in India could never make themselves anything other than untouchable (and equally important, by and large, they accepted this fact). Thus, social hierarchy is fixed, rigid, and transmitted across generations in these societies with mobility blocked for ever.

The caste system in India has undergone considerable changes over the years, especially during the course of the last century and a half. The most important driving force for these changes was the British rule and the socio-economic and administrative institutions and practices introduced by the British. The British when they introduced secular education, tried to attract the Dalits and the Backward Classes to education with the latent intention of weakening the freedom movement .But this paved way for the emergence and social elevation of backward classes who tried to take advantage of the education and develop their social status.

The British, when they introduced secular education, tried to attract the Dalits and the Backward Classes to education with the latent intention of weakening the freedom movement .But this paved way for the to the emergence and social elevation of backward classes, who tried to take advantage of the education and develop their social status. The Independent India, began with the agenda of ensuring an egalitarian society, initiated protective discrimination and constitutional safeguards to the marginalized sections of society. The states were directed to accord inputs for the developments of the backward classes, for the backward classes were not uniform throughout the country and in their

numerical strength. Accordingly, the states provided education and employment opportunities to the backward communities categorizing them into as, A, B, C, D and subsequently E in an inclusive strategy for development. The central government has in the last decade, began to provide reservations to backward classes in education and in Employment to the non- creamy layer.

The new economic and secular occupational opportunities have weakened the traditional association between caste and occupation. The emerging capitalist economy, especially since independence, has superimposed a Class stratification on the caste system. This has resulted in a coalescence of caste and class in some sectors of the population and a dissociation or divergence between them amongst the others. The exigencies of urban life have eroded caste- based social customs and behaviour patterns. The various social reform movements, the spread of liberal ideology, and the legislative enactments of the government as also its policy and programme of protective discrimination for the upliftment of the erstwhile downtrodden caste groups have also made severe dents in the caste system.

Thus, if on the one hand caste as a system is in general weakening, castes as interest groups have gained strength. In a society in the throes of change all this means that stratification is in a state of flux. While the changes in the caste system are most visible in the urban areas, the caste system still continues to color many facets of social and economic life in the rural areas.

Education

Formal education is regarded as a major agency of socialization in modern societies. But, education differs from other forms of socialization in that it involves instruction which is deliberate, conducted within formal organizations set aside for that purpose, and relatively standardized. Apart from socialization, education is also considered to be a necessary way of preparing children for adult life. Above all in the modern era education is a key input for development and empowerment.

Educational reformers and sociologists alike have seen the promotion of equality of opportunity in education as the key to new, more egalitarian society – a meritocracy, in which people could move freely up and down the occupational hierarchy according to personal merit. In a meritocracy, the education system would act ruthlessly and impartially to allocate individuals to a station befitting their ability; being born into a wealthy or powerful family no cushion against failure. In short, equality of opportunity in education would be the instrument severing the old links between family background and adult success.

We should note two points about the linked concepts of 'meritocracy' and 'equality of opportunity'. First, in most versions of the meritocratic argument, social inequality is assumed to be a more or less inevitable outcome of individual differences in intelligence or talent, given the 'need' in industrial societies to offer incentives to those of higher ability.

Two historical developments, namely, accelerated Globalisation and the ICT (Information and Communication Technology) Revolution, have caused all – pervasive and unprecedented global – level impact. No sphere of human life is left untouched by them. Unhindered growth of capitalism has culminated in a new world economic order, one of the distinguishing features of which is the predominance and importance of knowledge as a factor of production. It is commendable that India has developed a very a large network of institutions of higher education. However, mere quantitative growth of institutions alone would not serve the objective of becoming a globally recognized power. There are three main deficiencies, namely, inadequacy in access, uneven and inequitable opportunities of higher education across different categories and sections of the population, and low quality of education imparted in institutions of higher education.

Therefore, the question of equity has also become equally important. There are glaring disparities in General Enrolment Ratio among the Scheduled Castes (SCs), Scheduled Tribes (STs), Other Backward Classes (OBCs), Muslims, women, and the rural people, which need to be corrected for achieving the objective of inclusive growth, to make the society more egalitarian, inclusive and to harness the potentials of these groups for nation building. The issue of equality in education is intimately related to the prevailing socio-economic inequalities in the society.

Higher Education in India

Among things that post- independence India has succeeded in achieving is the phenomenal growth of higher education in terms of institutions, academic programmes, and enrolment. A large network of universities, colleges, and research institutes, that has been established, is globally recognized as the third largest. Hundreds of institutions of higher education are imparting education and providing training in the conventional and in the emerging disciplines to the students. The products of some of them have worldwide acceptability.

The foundation of the modern formal system of higher education was laid by the British regime when the first three universities at Bombay, Calcutta and Madras were established in 1857. The growth of the system in the subsequent decades was slow. It took several years for the fourth university to come into existence. A few colleges of liberal education were also then established. However, professional education remained largely neglected since the beginning. Historical records reveal that in 1916-17 there were only four engineering colleges in British India with a total annual intake of 74 students. Till 1921 – 22 only one more college was added. The period between 1931-32 and 1939-40 was totally blank. In 1911-12, there were only four medical colleges in the country. Their number went up to 12 in 1939-40. Since these universities and colleges were located in bigger cities, those having a tradition of education and mainly living in those cities could take advantage of these facilities.

It may be because of the tiny class of intellectuals, which came out of the portals of these institutions that posed a formidable challenge to the legitimacy of British rule in India that the British kept the access to higher education limited. The people of non-literate castes and communities that constituted a bulk of the Indian population lacked in self-consciousness and were not enough awakened to the importance of education for their individual development. So, their inclination to education was dormant or weak. The general awakening that got stirred during the independence movement, efforts of social reformers and visible benefits of education ignited the quest for education among common people.

After independence a great deal of boost was given to education, particularly higher education. The founding fathers of Independent India realized the crucial significance of education for the country's overall development. There was an increasing demand for educated and trained human resources to operate the multitude of units that were created to provide technical and allied services required to implement various development programmes including the industrial projects.

The pace of expansion of higher education continued and strengthened further. Before Independence, there were only 20 Universities and 591 Colleges in the country. In the post-independence period, there has been a dramatic growth in the number of institutions of higher education. In 2006, there were in all 356 Universities and University-level institutions, which included 20 Central Universities, 211 State Universities, 107 'Deemed to be Universities', and 18 Institutions of National Importance. The total number of universities in the country has now reportedly grown to 421. The growth of universities is multi – faceted. Among 365 universities, 219 are conventional universities and 146 are universities of specialized education. The latter include universities of engineering and

technology, agriculture, health sciences, Indian languages, law, women, yoga, fine arts, museum, population sciences, Jainology, and like.

In the present context of Globalization, Education has become a global in character. The whole world had become a manufacturing society the new concept is that of knowledge society and knowledge network are the ruling terms. Today the demand for professionals for a worldwide market has turned the world of higher education assuming a global character producing professionals for global market on lucrative pay rolls. With opportunities beckoning, there had been an unprecedented demand for engineering and business graduates. In this context it has to be examined as to the progress made by the disadvantaged sections in higher education particularly in professional education like engineering and medicine, which are the most preferred professional courses.

Six decades have rolled by. There were very few studies made on the progress made by various communities in terms of attainment of higher education. The studies in education were mainly focused on the primary and secondary level where we are yet to achieve total literacy. The population being heterogeneous in character the social exclusion of predominant sections for centuries had created a lag between the advantaged and the disadvantaged sections of the society. In an effort to bridge the gulf between these sections various programmes were initiated ensure equality of opportunity to ensure egalitarian character. Its time that studies are to be made to assess the progress made by the backward classes sequel to the provision of special privileges and development inputs for their social development through educational and economic inputs. Currently 'social Inclusion' and 'social Exclusion' have become the buzz words. The success of public policies and programmes is now being assessed in terms of how far they are socially inclusive. The concept of social inclusion is loaded with a sense of social justice and notion of morality.

An inclusive growth is considered a desirable aspect of development. There is now growing awareness of this among the policy makers, too. Quite a few of the groups and sections in Indian society have so far not got their legitimate share in the developmental gains of the country. This situation is now viewed as potentially harmful to the general wellbeing of society, to national integration, and ultimately to the stability of the democratic polity. The developmental policies and programmes are now being redesigned to give them a socially inclusive character. The disadvantaged groups have also become more aware of their rights and claims which they express in different ways. The government's commitment to equitable distribution of gains and opportunities is ingrained in its policy formulations. This is evident from the fact that the XI Plan documents bear the words, 'With Inclusive Growth'.

The era of globalization has brought into currency the terms 'social Inclusion' and 'social Exclusion' have become the buzz words. The success of public policies and programmes are now being assessed in terms of how far they are socially inclusive. Today the concept of social inclusion, is loaded with a sense of social justice and notion of morality as well. An inclusive growth is considered a desirable aspect of development. There is now growing awareness of this among the policy makers, too. Quite a few of the groups and sections in Indian society have so far not got their legitimate share in the developmental gains of the country. This situation is now viewed as potentially harmful to the general wellbeing of society, to national integration, and ultimately to the stability of democratic polity, So, the developmental policies and programmes are now being redesigned to give them a socially inclusive character. The disadvantaged groups have also become more aware of their rights and claims which they express in different ways. The government's commitment to equitable distribution of gains and opportunities is ingrained in its policy formulations from the tie of independence . This is evident from the fact that the XI Plan

documents also reiterate the same goal bearing the words, 'With Inclusive Growth'.

To what an extent did these inclusive development strategies succeeded in triggering the social mobility of the downtrodden castes through higher education more so through professional education has not been object of study for long. There has not been statistics on their numerical strength. To fill the void in the gap the present study was attempted to shed light on the progress and social inclusion of backward classes through higher education and the empowerment of these erstwhile disadvantaged sections.

Objectives

1. To estimate the progress of backward classes in higher education particularly in Engineering and Medical courses.
2. To assess the quality and the extent of social Inclusion and equality of opportunity achieved by backward classes in higher education for their inclusion into mainstream society.

Method of Study

This paper is based on a study on 340 Engineering and 70 Medical students belonging to backward Classes' students enrolled in premier Government professional colleges viz the JNTU College of Engineering and the Anantapur Medical College, in Anantapur City of Andhra Pradesh.

Findings and discussion

It can be said that boys and girls from backward classes are into engineering and medical streams making use of the inclusive policy of reservations. Besides the social inclusion of boys from the backward sections, there is also inclusion of once deprived, weaker sections, of society namely the women from these backward classes.

It has been found that students from all five Sub castes of Backward Castes are entering professional education mainly through the reservation channel but many of them could also bag seats under open quota. It was heartening to note that 37.94 per cent of the Engineering seats and 25.71 per cent of the Medical seats in the open were bagged by boys and girls from the backward sections. Analyzing it by sub caste wise it can be seen that among the Engineering seats bagged by backward class students, the percentage of BC C, students bagging OC seats was more (45.45

Table I: Distribution of Respondents by Gender and Course

Sl. No.	Gender	No. of Respondents Engineering	Medical	Total
1.	Male	215 (63.24)	43 (61.43)	**258 (62.93)**
2.	Female	125 (36.76)	27 (38.57)	**152 (37.07)**
	Total	**340 (100.00)**	**70 (100.00)**	**410 (100.00)**

Table II: Distribution of Respondents by the Caste

Sl. No.	Caste	No. of Respondents Engineering	Medical	Total
1.	BC-A	90 (26.47)	15 (21.43)	**105 (25.61)**
2.	BC-B	99 (29.12)	18 (25.71)	**117 (28.54)**
3.	BC-C	11 (2.24)	6 (8.57)	**17 (4.15)**
4.	BC-D	96 (28.24)	16 (22.86)	**112 (27.32)**
5.	BC-E	44 (12.94)	15 (21.43)	**59 (14.39)**
	Total	**340 (100.00)**	**70 (100.00)**	**410 (100.00)**

%, followed by BCB (42.42), and BC D students (38.64 % and BC A (37.78). Among the Medical seats the BC B & BC C students have bagged 33.33 of OC seats followed by BC D, 25%. and BCA & BC E 20 %). This only shows the equality of opportunity and the empowerment of the backward classes through higher education.

Table III: Distribution of Respondents by their Sub- Caste and Branch of Study

SI. No.	Caste	Engineering						Medical		Grand Total
		Civil	E.E.E	Mech	E.C.E	C.S.E	Total	M.B.B.S	Total	
1.	BC-A	20 (29.41)	16 (24.62)	19 (27.14)	15 (22.06)	20 (28.99)	**90 (26.47)**	15 (21.43)	**15 (21.43)**	**105 (25.61)**
2.	BC-B	20 (29.41)	20 (30.77)	20 (28.57)	20 (29.41)	19 (27.54)	**99 (29.12)**	18 (25.71)	**18 (25.71)**	**117 (28.54)**
3.	BC-C	1 (1.47)	1 (1.54)	2 (2.86)	4 (5.88)	3 (4.35)	**11 (3.24)**	6 (8.57)	**6 (8.57)**	**17 (4.15)**
4.	BC-D	19 (27.94)	20 (30.77)	18 (25.71)	19 (27.94)	20 (28.99)	**96 (28.24)**	16 (22.86)	**16 (22.86)**	**112 (27.32)**
5.	BC-E	8 (11.76)	8 (12.31)	11 (15.71)	10 (14.71)	7 (10.14)	**44 (12.94)**	15 (21.43)	**15 (21.43)**	**59 (14.39)**
	Total	**68 (100.00)**	**65 (100.00)**	**70 (100.00)**	**68 (100.00)**	**69 (100.00)**	**340 (100.00)**	**70 (100.00)**	**70 (100.00)**	**410 (100.00)**

Course and Gender wise enrolment of backward class students shows that girls from backward Classes are entering all branches of Engineering. They are found be joining even the male preferred branches of Civil and Mechanical engineering. The usually preferred branches by girls are E.E.E. E.C.E. C.S.E. Due to the decline for the software the demand for conventional branches of Engineering Civil and Mechanical are being preferred not only by boys but also by girls as well. This indicates their confidence and positive orientation to professional education.

It is observed that 72.20 per cent of backward class students from both engineering and medical courses are from Rural (43.90%)

Table IV: Distribution of Respondents by their Places of birth

SI. No.	Place of Birth	No. of Respondents		Total
		Engineering	Medical	
1.	Rural	161 (47.35)	19 (27.14)	**180 (43.90)**
2.	Semi – Urban	85 (25.00)	31 (44.29)	**116 (28.30)**
3.	Urban	94 (27.65)	20 (28.57)	**114 (27.80)**
	Total	**340 (100.00)**	**70 (100.00)**	**410 (100.00)**

Table V: Distributions of Respondents by the Category of admission

Sl. No.	B.C. Students	No. of Respondents		Total
		Engineering	Medical	
1.	Reservation Category	211 (62.06)	52 (74.29)	263 (64.15)
2.	Open Category	129 (37.94)	18 (25.71)	147 (35.85)
	Total	**340 (100.00)**	**70 (100.00)**	**410 (100.00)**

and semi urban areas (28.30%). These students hailing from backward rural and semi urban background have shown remarkable sense of achievement in overcoming the backwardness through their excellent academic achievement.

Analyzing the income level of their families, it can be seen that 48.29 of the families have a monthly income of less than Rs. 10,000 p.m. and 26.34 per cent have income level of Rs. Rs.10,000 and above. The inference here is that the economic condition of the families of the students belonging to backward classes indicate, that their condition is one of just above the position of disadvantage.

The parental level of education shows that in the case of 29.76 % of respondents the level of education of the parents is equal and in the case of 65.85 % of cases, fathers are more educated than their mothers and only in the

Table VI: Distributions of Respondents by the Sub Caste & Reservation Category

B.C. Students	Engineering						Medical					
	BC-A	BC-B	BC-C	BC-D	BC-E	Total	BC-A	BC-B	BC-C	BC-D	BC-E	Total
Reservation Category	56 (62.22)	57 (57.58)	6 (54.55)	65 (67.71)	27 (61.36)	**211 (62.06)**	12 (80.00)	12 (66.67)	4 (66.67)	12 (75.00)	12 (80.00)	**52 (74.29)**
Open Category	34 (37.78)	42 (42.42)	5 (45.45)	31 (32.29)	17 (38.64)	**129 (37.94)**	3 (20.00)	6 (33.33)	2 (33.33)	4 (25.00)	3 (20.00)	**18 (25.71)**
Total	90 (100.00)	99 (100.00)	11 (100.00)	96 (100.00)	44 (100.00)	340 (100.00)	15 (100.00)	18 (100.00)	6 (100.00)	16 (100.00)	15 (100.00)	70 (100.00)

Table VII: Distribution of Respondents by the fathers' income

SI. No.	Level of Monthly Income	No. of Respondents		Total
		Engineering	Medical	
1.	Rs1000 – 2000	73 (21.47)	15 (21.43)	**88 (21.46)**
2.	2000 – 3000	45 (13.24)	6 (8.57)	**51 (12.44)**
3.	3000 – 5000	49 (14.41)	10 (14.29)	**59 (14.39)**
4.	5000 – 10000	80 (23.53)	11 (15.71)	**91 (22.20)**
5.	10000 – 20000	58 (17.06)	24 (34.29)	**82 (20.00)**
6.	20000 – 30000	11 (3.24)	2 (2.86)	**13 (3.17)**
7.	30000 – 40000	3 (0.88)	1 (1.43)	**4 (0.98)**
8.	40000 – 50000	6 (1.76)	0 (0.00)	**6 (1.46)**
9.	50000 >	3 (0.88)	0 (0.00)	**3 (0.73)**
10.	Father not alive	12 (3.53)	1 (1.43)	**13 (3.17)**
	Total	**340 (100.00)**	**70 (100.00)**	**410 (100.00)**

case of 4.39 cases the mother have higher level of learning than their fathers. On the whole the parental level of education predominantly in secondary and Intermediate level which seemed to have enabled the parents to realize the importance of education and also had enabled them to take appropriate decisions for their wards' education.

Conclusion

The paper on the basis of the above key findings draws the conclusion that the students belonging to Backward classes are entering the portals of higher education easily more so because of the inclusive initiative of reservations. It is heartening to see that within a short span of less than 60 years the backward classes have shown remarkable level of educational mobility, even excelling to bag 37.94 % of Engineering seats and 25.71 % of medical seats in the open category. These seats are in the premier Institutions of higher learning offering professional education. Hailing predominantly from disadvantaged families from rural and semi urban areas, these students could scale higher levels of professional education with higher academic consistency and exhibiting positive value orientation. The inclusive initiative of reservations in education and occupations in the states did result in empowering and uplifting the backward classes to pave way for their occupational and social mobility there by vindicating the inclusive policy of reservations, which has brought about equality of opportunity for these backward class students.

References

1. Agarwal Pratap C, Mohamad SA. *Equality through privilege*. Sri Ram Centre for Industrial Relations and Human resources. New Delhi, 1976.
2. Ainapur LS. The Dynamics of Caste Relations in Rural India. Jaipur: Rawat Publications; 1986.
3. Alexander KC. A study of Changing pattern of Behaviour: The Pullaya Untouchables of the Kerala. *Unpublished Doctoral Theses*. 1966.
4. Amarnath R Das. Comprehensive Institutional Care and School Education of Scheduled Caste

Table VIII: Matrix Showing levels of Education of Respondents' Fathers and Mothers Fathers Education

	No Schooling	Primary Education	Upper Primary Education	Secondary Education	Inter-mediate	Degree	Post Degree	Professional
No Schooling	59	20	12	35	14	11	1	8
Primary Education	2	5	6	18	4	1		1
Upper Primary	1	1	3	12	6	4	1	3
Secondary Education	2	1	5	21	23	26	4	10
Interme-diate	1			4	3	13	4	9
Degree				1		14	8	11
Post Degree						1	2	1
Professi-onal						2	1	15

of Andhra Pradesh. *Unpublished Doctoral Thesis*. 1990.

5. Bottomore TB. *Sociology*. London: George Allen and Unwin; 1962.
6. British Paramountacy. *British Paramountacy and Indian Renaissance*. Part II. Bombay: Bharathiya Vidya Bhavan.
7. Bougle Calestine. *Essays on the Caste system*. Cambridge: Cambridge University Press; 1971.
8. Roy Burman BK. *Beyond Mandal and After*. Backward Classes in Perspective. Delhi: Mittal.

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Infrastructure Financing in the Indian Context

Santhosh Kumar S.*, Helaney M.Y.**

Abstract

Infrastructure development is one of the pre-requisites for economic development of any nation. Quite often it is considered as an index of economic development of a country. Conceptually, infrastructure development should precede or at least be parallel to pave way for economic development. Finance occupies a significant role in infrastructure development. India, being a democratic country and a mixed economy, the responsibility for infrastructure building primarily rests with the Central Government, State Governments and local bodies. As tax payers' money in the exchequer is quite insufficient to provide for developmental activities, infrastructure financing in developing nations like India is a crucial problem demanding alternative sources of capital and efforts. In addition to taxes, there are several other sources for infrastructure financing like issue of bonds, finance from institutions like Housing and Urban Development Corporation, Infrastructure Development Finance Company Ltd., Financial Infrastructure Leasing and Financial Services, Public Private Partnership (PPP) etc. But, severe scarcity of finance for the development of infrastructure in the country is quite evident. The different States in India with multifarious social, geographical and demographic characteristics have their own different requirements in creating and developing infrastructure. This paper examines the different aspects of infrastructure financing in the Indian context.

Key Words: Infrastructure financing; Infrastructure development; Infrastructure finance sources; Indian infrastructure financing; Indian infrastructure growth.

Introduction

Historically, governments have played the predominant role in owning and operating infrastructure facilities such as schools, hospitals, roads, bridges, railways, ports, telecommunications networks, and water and electricity supply facilities. Government investment in infrastructure has been justified as a response to natural monopolies where the infrastructure services are seen as essential. Difficulty in charging users also provided a justification for public provision of infrastructure (Chan and others, 2009). But, the ever growing requirements of building and maintaining quality infrastructure has been constrained by the lack of finance to be made good from alternative sources. Growing acceptance of the 'user pays principle', along with recognition that there are generally greater incentives for efficiency in the private sector, has been soaring private involvement in the provision of both economic and social infrastructure. Here lies the significance of private sector as an important source in infrastructure financing.

Infrastructure investment in India was financed almost entirely by the public sector – from government budgetary allocations and internal resources of public sector infrastructure companies. It is all about nearly less than fifteen years that private sector has been emerged as an important source of infrastructure finance in India. More specifically the recent seven years from 2003 has recorded a tremendous increase in private sector investment in country's infrastructure (Lall and Anand, 2008). The ratio of investment in infrastructure to GDP of the

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(Received on 22.04.2012, accepted on 29.05.2012)

country over years is an index of infrastructural development happening in real terms in the country. Infrastructure development in the country has been constrained by inadequacy of financial resources posing challenges to innovative and sustained remedies. According to the Government of India, the country would need about 14, 50,000 crore ($ 320 billion) investment (at 2005-06 prices) in various infrastructure sectors during the Eleventh Five Year Plan period covering 2007-12 (Government of India, 2007). But the Deepak Parekh Committee[1] on Infrastructure Financing believes the estimate of the Government is gross underestimate and a sum of Rs. 17,40,000 crore ($ 380 billion) would be required to finance investments in infrastructure[2] up to 2007 – 2012. Against this, the most optimistic estimate of government financing is Rs. 13, 60,100 crore. Thus there is minimum financing gap of Rs. 5, 50,000 crore which has to be met through private sector and other non-governmental financing (Dhingra, 2009). Fundamentally, the requirement of finance is positively correlated to the requirement of infrastructure the country planned to build. The question of sourcing finance for funding infrastructure is supplementary to the requirement of infrastructure. If that is the working concept, all developing nations like ours have to find ways and means to fund the never ending gap in infrastructure financing.

Scope and Objectives of the Paper

The present paper is a descriptive one looking into the trend in infrastructure investment over the last one and half decade in India, the present financing pattern of infrastructure investments and the various points to ponder connected to financing of infrastructure in India. More specifically the paper pursues the following objectives.

1. Review the growth trend in creation of physical infrastructural facilities in India.
2. Examine the sector-wise infrastructural investment and its financing pattern over Five Year Plans in India.
3. Observe the issues connected to infrastructure financing in India primarily based on the actual financing of infrastructure during the first three years of the 11th Five Year Plan.

Observations and Discussion

Physical Infrastructure Growth in India

Physical infrastructure growth in India when viewed in terms of growth of physical facilities over number of years and growth in total investment in comparison to GDP of the country are shown in Table 1 and Table 2. The performance of physical infrastructure in the economy during the last one and half decades had been mixed and uneven. Over years, India's telecom and container traffic grew much faster than road, rail and power. For example, India's rising trade has been reflected in growing container port traffic, which increased from less than a million in 1991 to about 5 million in 2005 with an annual growth rate of about 266 per cent since 1991(Table 1). In contrast infrastructure in railways, roadways and airways witnessed little expansion in last one and half decades. In general, performances of these sectors (railways, roadways and airways) are nevertheless poor, when counted their densities in terms of country's surface area or population. Logically, in order to unleash India's full potentials, development of railways, roadways and airways of India's physical infrastructure perhaps deserves utmost attention. This also indirectly indicates high investment potentials in roadways, railways, power and the associated components in India.

An examination of the practices in infrastructure investment in some select countries throws light on the means adopted

Table 1: Growth of Physical Infrastructure in India

Particulars	1991	2000	2005	AAGR % (1991-2005)
Railways length (1000 Km)	62.46	62.76	63.47	0.13
Road Length (Million km)	2.35	3.32	3.85	5.32
Fixed line and Mobile Phone subscribers (per 1000 people)	7	36	128	150.35
Air Freight (million tonnes per km)	493.10	547.65	773.22	4.73
Air Passengers carried (million)	10.72	17.30	27.53	13.07
Container port traffic (million TEUs)	0.15	2.45	4.94	266.01
Electric power consumption (KW per capita)	295.02	402.02	457.32	4.58
Electric power consumption (KWh)	255.65	408.42	493.78	7.76

Note: AAGR (Annual Average Growth Rate) for the period 1991 -2005.
Source: World Development Indicators, World Bank

by these nations to address gap in infrastructure availability. The ratio of investment in infrastructure to GDP of different countries can offer a comparative picture of infrastructural investment thrust for development among countries (Table 3). China, for instance, annually spends as much as 20 per cent of its GDP on infrastructure development, and this is substantially higher in comparison with India which spends just about 6 per cent of its GDP on provision of physical infrastructure. Malaysia and East Asia spend 5.4 per cent and 6.2 per cent of GDP respectively on infrastructure. Increase in infrastructure investment to GDP ratio, therefore, is an index of infrastructure development.

Sector-wise Infrastructure Investment and its Financing pattern over Five Year Plans

The urgency with which a nation views its infrastructural development can be judged from their long-term plan blueprints for different time periods. The direction, thrust and means for infrastructure development are guided by these basic documents. Examination of the Five Year Plans in India could reveal sector-wise infrastructure planning in the country over years and its means of finance. The 11th Five Year Plan of India aims at sustaining the real GDP growth rate at 9 per cent. Being a country marching towards double digit growth rate would improve the quality of life and reduce disparities across regions and communities. To achieve this, a structured infrastructure investment programme, involving both public and private sector, has been sketched out for the Plan period. A comparison of the 10th Five Year Plan and the 11th Five Year Plan reveals that altogether an increase of 126. 93 per cent in investment of infrastructure have been planned during the 11th Plan (Table 4). Sector-wise, the 11th Plan has scheduled an increase in infrastructure investment of around three times or more for the sectors comprising ports, airports and storage. The 11th Plan projected

Table 2: Ratio of Investment in Infrastructure to Indian GDP

Year	Investment in Infrastructure	GDP	Ratio (%)
2006-07	2,44,495	4283979	5.7
2007-08	3,03,807	4947857	6.1
2008-09	321579	5574449	5.8

Source:
1. Planning Commission, Investment in Infrastructure during the 11th Five Year Plan
2. Government of India. 2010. *Economic Survey 2009-10*

Table 3: Infrastructure Investment of Country-wise Comparison

Sl. No.	Country/ Region	Investment in Infrastructure As a % of GDP
1	India	6
2	East Asia	6.2
3	China	20
4	Malaysia	5.4

Source: RBI Staff Studies, Infrastructural Financing – Global Pattern and the Indian Experience, 2010

relative shares of public and private investment to be about 70 per cent and 30 per cent respectively as compared with 80 per cent and 20 per cent respectively during the 10th plan (Figure 3).

Financing of infrastructure by central government, state governments and private sector during the 10th Plan period (actual) and the 11th Plan period (projected) shows that towards a planned private sector share of 20 per cent during the 10th Plan period, the actual private investment rose to 24. 86 per cent (Table 6). Similarly, a higher share of the private sector in infrastructure investment during the 11th Plan period is expected towards the projected share of 30.2 per cent. The growing involvement of private sector finance in infrastructure investment plans over years is quite evident here.

Table 4: Infrastructure Investment 10th Plan – Sectoral Analysis (Rs. in Crore)

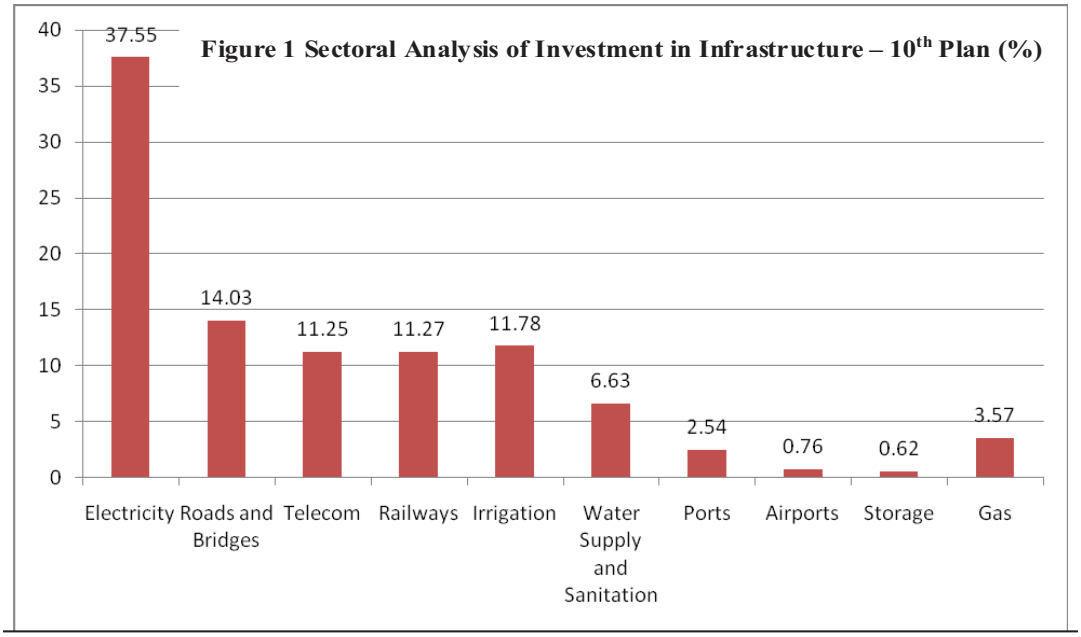
Sector	10th Plan (Actual)		11th Plan		% Change over Plans
	Total	%	Total	%	
Electricity	340237	37.55	666525	32.4	95.90
Roads and Bridges	127107	14.03	314152	15.3	147.16
Telecom	101889	11.25	258439	12.6	153.65
Railways	102091	11.27	261808	12.7	156.45
Irrigation	106743	11.78	253301	12.3	137.30
Water Supply and Sanitation	60108	6.63	143730	7.0	139.12
Ports	22997	2.54	87995	4.3	282.64
Airports	6893	0.76	30968	1.5	349.27
Storage	5643	0.62	22378	1.1	296.56
Gas	32367	3.57	16855	0.8	-47.93
Total	**906075**	**100**	**2056150**	**100**	**126.93**

Source:
1. RBI Staff Studies, Infrastructural Financing – Global Pattern and the Indian Experience, 2010
2. Planning Commission, Investment in Infrastructure during the 11th Five Year Plan

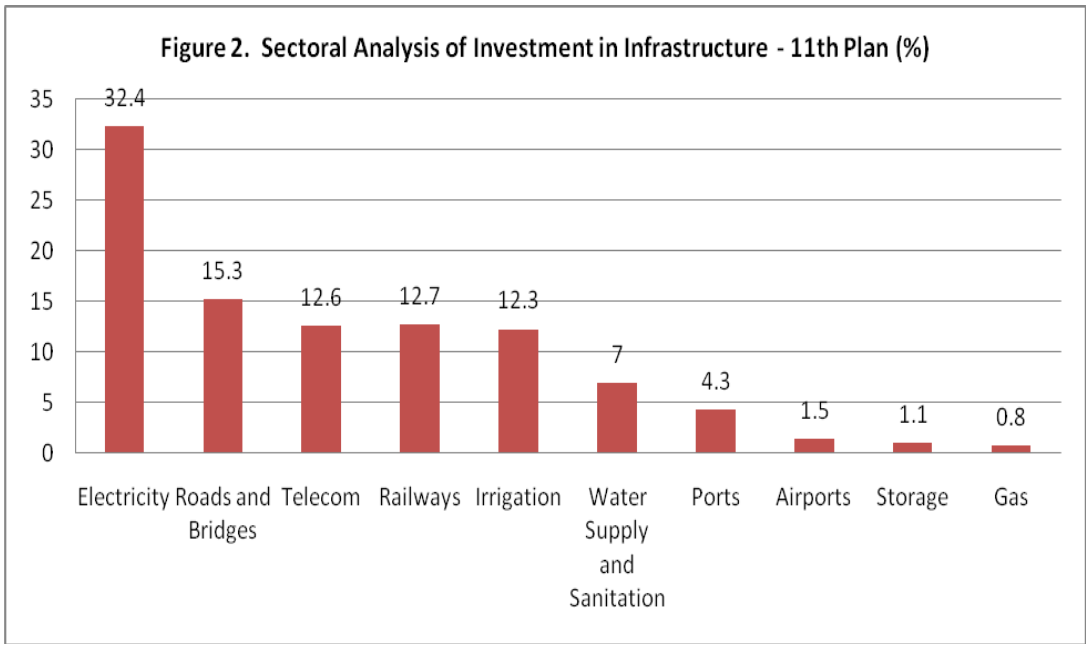
Infrastructure Financing in India – Points to Ponder

Developing countries including India need about 7 – 9 per cent ($900 billion) of GDP to maintain existing infrastructure and to build new infrastructure, but only half of that amount is available (World Bank, 2010). The World Development Indicators 2010 states that Governments can leverage the benefits of private investment in infrastructure by introducing competition. Private companies can better manage infrastructure services by operating efficiently. The requirement and importance of building and maintaining infrastructure by private sector are increasingly acquiring momentum throughout the world irrespective of the nature of governments in power.

The alarming point in the 11th Plan has been the estimated gap in infrastructural financing during the plan period to the extent of Rs.



Source: Drawn from data given in tables of the text



Source: Drawn from data given in tables of the text

5,50,000 crore which has to be met through private sector and other non-governmental financing (Dhingra, 2009). As stated earlier, during the 10th Plan about 25 per cent of the total investment in infrastructure came from private sector against the Plan estimate of 20 per cent. The private sector share is expected to rise to 36 per cent during 11th Plan against the estimate share of 30 per cent. The shortfall of 8.7 per cent (Rs. 125,266 crore) in public investment as compared to the initial target for the 11th Plan is likely to be made good by an increase of 20 per cent in private investment. This is a solid evidence for the

Table 5: Infrastructure Investment Projection for XI Plan (Rs. in Crore)

Sector	2007-08	2008-09	2009-10	2010-11	2011-12	Total
Electricity	81954	101553	126380	158027	198611	666525
	12.30	15.24	18.96	23.71	29.80	100
Roads and Bridges	51822	54789	59200	68370	79971	314152
	16.50	17.44	18.84	21.76	25.46	100
Telecom	31375	38134	48593	61646	78690	258439
	12.14	14.76	18.80	23.85	30.45	100
Railways	34225	40964	49525	60393	76701	261808
	13.07	15.65	18.92	23.07	29.30	100
Irrigation	27497	35916	47189	62266	80433	253301
	10.86	14.18	18.63	24.58	31.75	100
Water Supply and Sanitation	19298	22781	27323	33266	41063	143730
	13.43	15.85	19.01	23.14	28.57	100
Ports	12409	14822	17374	19980	23410	87995
	14.10	16.84	19.74	22.71	26.60	100
Airports	5208	5520	5904	6646	7690	30968
	16.82	17.82	19.06	21.46	24.83	100
Storage	3777	4098	4446	4824	5234	22378
	16.88	18.31	19.87	21.56	23.39	100
Gas	2708	3003	3332	3700	4111	16855
	16.07	17.82	19.77	21.95	24.39	100
Total	**270273**	**321579**	**389266**	**479117**	**595913**	**2056151**

Source: RBI Staff Studies, Infrastructural Financing – Global Pattern and the Indian Experience, 2010

increasing requirement of private sector participation in infrastructure building in the present day country's environment. However, the actual figures on sources of finance of infrastructure during the first three years of 11th Plan period indicate the lowering proportion of debt finance which is the major source of private investment (Table 7 and Figure 4). In this context, the various important points to ponder in connection with infrastructural financing in the country have been discussed below.

Lack of Participation from Insurance Companies

The insurance companies which have more access to long-term funds in the country are averse to taking on project risk. The share of finance of the insurance sector towards infrastructure investment in the country was only 4 per cent during the first three years of the 11th Plan (Figure 4). Their investment fell from Rs. 28900 crores in 2006-07 to 10400 crore in 2007-08. Insurance companies prefer the safer route of subscribing to debt paper avoiding commitment in infrastructure.

Reduced Overseas Funding Due to Financial Crisis

The average FDI inflows per year towards infrastructure during the 10th Plan increased manifold compared to the flow in the 9th Plan. However, during the 11th Plan infrastructure financing from overseas declined as a result of the global financial crisis. The overseas funding comprising foreign direct investment (FDI) and external commercial borrowings (ECBs) towards infrastructure investment during the first three years of the 11th Five Year Plan was 14 per cent. The Reserve Bank of India (RBI) data shows that ECBs raised by infrastructure companies declined by 41 per

Table 6: Infrastructure Investment Financing for 10th and 11th Five Year Plan (Rs. in Crore)

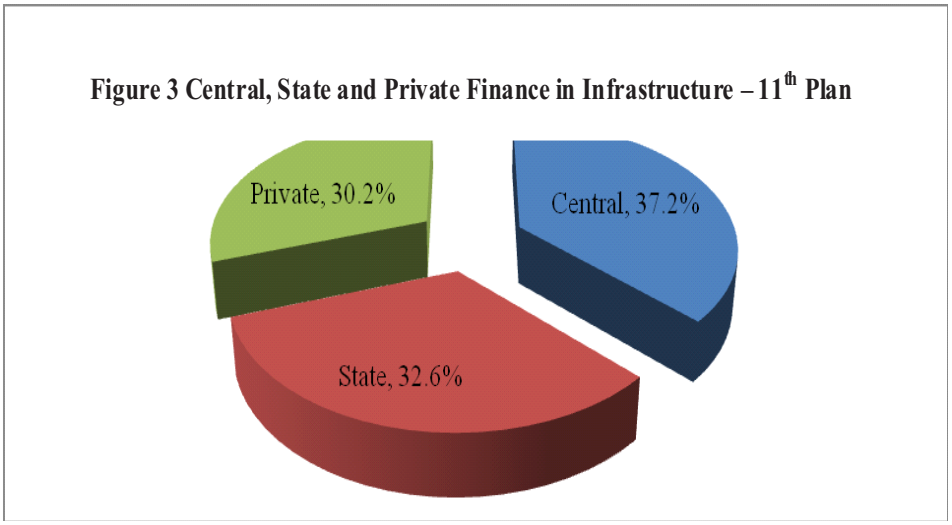
Public/Private	10th Plan (Actual)		11th Plan	
			Amount	%
Central	370381	40.88	765622	37.2
State	310473	34.27	670937	32.6
Private	225221	24.86	619591	30.2
Total	906075	100	2056150	100

Source: RBI Staff Studies, Infrastructural Financing – Global Pattern and the Indian Experience, 2010

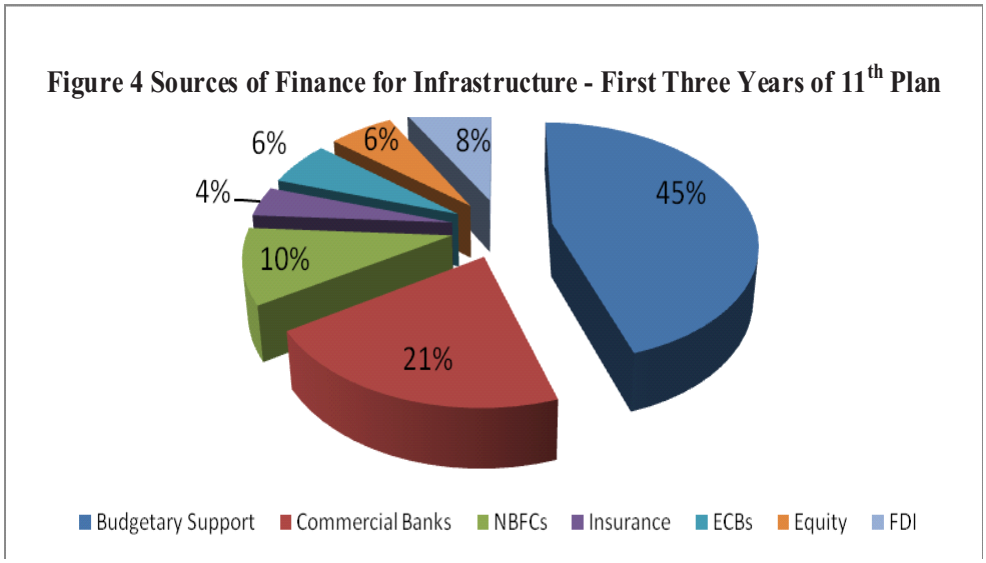
cent between August 2008 and March 2009. However, signs of improvement are visible in this regard.

Over Dependence on Bank Lending

The bank lending toward infrastructure investment during the first three years of the 11th Five Year Plan was 21 per cent. Lack of funding from other avenues coupled with banks being flush with money in 2009-10 resulted in banks becoming the biggest lenders



Source: Drawn from data given in tables of the text



Source: RBI Staff Studies, Infrastructural Financing – Global Pattern and the Indian Experience, 2010

Table 7: Sources of Finance for Infrastructure First Three Years of XIth Plan

Sl. No.	Sources of Finance	Actual First 3 years of 11th Plan	Budgeted % in 11th Plan
1	Budgetary Support	45	51.9
2	Equity Financing (including FDI)	14	
3	Debt Financing	41	48.1
	Total	100	100

Source: RBI Staff Studies, Infrastructural Financing – Global Pattern and the Indian Experience, 2010

to infrastructure projects. However, infrastructure projects require debt for 15-20 years of maturity and deposits raised by commercial banks are of much shorter duration leading to an asset liability mismatch. The maturity mismatch poses both liquidity risk and interest rate risk for the banks. Moreover, banks and financial institutions have limited appraisal skills necessary for credit appraisal of infrastructure projects.

Lack of Refinancing through ECBs

The existing guidelines of the RBI do not permit domestic financial intermediaries to refinance existing rupee loans from external sources, although a potential market for the same exists. If such refinancing is permitted, there is scope for foreign financiers to show interest in financing projects in the post construction period when the risk subside. Moreover, Indian lenders to infrastructure projects could refinance some of their loans refinanced in order to enhance their asset portfolio and to limit their risk.

Limits on FDI Investment

Even though FDI policy of India has been liberalised since the economic reforms in the country, 100 per cent FDI is not permitted all new infrastructure projects. Telecommunication services attract 74 per cent FDI ceiling subject certain conditions. In the case of air transport services, FDI is allowed only up to 49 per cent.

Utilisation of Foreign Exchange Reserves

There has been a considerable debate about the use of foreign exchange reserves for infrastructure development, but the idea has not made any headway. These reserves, while providing a buffer against adverse external developments, do not contribute directly to the real sector, as they are invested in foreign currency assets such as government bonds. The financial return on these reserves is small. It may be pointed out that rapid accumulation of reserves in recent years has happened not only in India, but also in emerging Asian economies such as China, Korea, Singapore, Thailand and Philippines. Recognizing that the reserves are in excess of what is needed for 'liquidity purposes and cushions against external shocks' some of these countries (China and Korea) have been allocating to infrastructure projects along the lines adopted by Singapore.

Gap in Earlier Plans and Actual

Investment in infrastructure over the past decade has not lived up to expectations. The 1996 India Infrastructure Report projected the need for an increase in investment in infrastructure to 8 per cent of GDP by 2005-06 from the current level of less than 5 percent. However, the infrastructure investment of India still revolves around only 6 per cent GDP (Table 2 and 3). The same report targeted significant increases in both public and private spending on infrastructure — including a doubling of private infrastructure spending to

over 2 percent of GDP by the late 1990s. At the end of the 1990s, however, actual investment (public and private) in infrastructure remained at under 4 percent of GDP per annum. In 1999, public investment in infrastructure stood at 2.8 percent of GDP while private investment was just 0.9 percent of GDP. Indeed, throughout the past decade, private investment in infrastructure has remained at well below the targeted 2 percent of GDP. These are lessons before us to initiate more measures to reduce the gap between plan and actual.

Constraints in Equity Financing

Equity finance towards infrastructure investment during the first three years of the 11th Five Year Plan was only 6 per cent. Raising adequate equity finance tends to be the most challenging aspect of infrastructure project financing, as equity typically shoulders the greatest level of operational, financial and market risk. However, at present, limited exit options for investors limits equity financing.

Underdeveloped Debt Market

Underdeveloped debt markets are yet another key constraint to infrastructure financing. Most infrastructure projects require longer term debt. The lack of size and depth in India's corporate bond market is associated partly with the lack of depth in the government bond market. Beyond that, corporate debt markets are constrained by cumbersome primary issuance guidelines; inadequate credit information; inefficient clearing and settlement mechanisms; poor and lengthy enforcement laws relating to default proceedings; inefficiencies arising from weaknesses in regulation, including poor coordination among the various agencies involved in corporate debt market regulation; and the absence of long term investors (World Bank, 2006).

Regulatory Issues

Investment policies and regulatory guidelines for insurance companies, pension funds, mutual funds, banks and other FIs need to be sufficiently flexible for these entities to choose an appropriate risk-return profile within the fiduciary constraints. This will also help professionalise fund management. It would be appropriate or practical to introduce radical changes in investment guidelines to sufficiently deregulate these sources of long-term finance for infrastructure related projects. The authorities should look at the existing investment norms prescribed for insurance, Employees Provident Fund (EPF) and Public Provident Fund (PPF) with a view to relaxing them so that these institutions can commit significantly larger amounts of long-term funds for infrastructure.

Public Private Partnerships (PPPs) Not a Panacea

There is increasing need to encourage entry of the private sector in infrastructure development through viable PPP projects. Both the central government and the states are aiming to use PPPs more intensively to help meet gaps in the provision of basic services in the country. Developing domestic capabilities to manage, participate and finance private infrastructure projects is important to broaden the constituency of PPPs, enlarge the pool of funding, and mitigate foreign exchange risk. It is important to note that PPPs can help meet the infrastructure gap in India, but are not a panacea.

Conclusion

India on its march towards double digit growth rate in the nearby future has unprecedentedly been faced with the requirement of building quality infrastructure. As budgetary supports and available debt finance for financing infrastructure are in

short to finance the requirement, bridging the gap in infrastructure financing has become a strenuous job before the government and planners. Varied measures, involving innovative sources of finance and streamlining available sources, are of urgent need to bridge the present and expected gap in financing. Even though the earlier Five Year Plans had made increased expectation on private sector to finance infrastructure, the actual results were disappointing. Moreover, the proportion of debt finance during the first three years of the 11th Five year Plan was alarming as debt proportion declined considerably. Fixing up the blame on global financial crisis (started in 2007) or on some other phenomenon would not help bite remedy. Real measures taking into consideration the strength and weakness of the present sources of finance and exploring new sources along with improved policy regulations can bring results. The setting up of an India Infrastructure Debt Fund for $ 2 billion as planned in the Union Budget 2011-12 to meet the needs of long-term debt for infrastructure projects that are set up through Public Private Partnerships (PPP) and the Twelfth Plan period proposal for infrastructure investment of Rs. 50 lakh crore, and to raise about half of this from the private sector are welcome moves. Moreover, widening of the Viability Gap Funding (VGF) under the Scheme for Support to PPP in infrastructure in the Union Budget 2012-13 is a very significant step in attracting private investment into the sector.

Footnotes

Deepak Parekh Committee was constituted in 2006 by Ministry of Finance, Department of Economic Affairs (Infrastructure Division) under the chairmanship of Shri. Deepak Parekh, Chairman, HDFC, to make recommendations on Infrastructure Financing in India.

Definition of infrastructure varies across agencies. Here attempt is made to use, as far as possible, the Planning Commission of India's definition, which includes the following 10 sectors: electricity, gas, telecoms, roads, rail, airports, ports, storage, irrigation and water supply and sewerage.

References

1. Audit Committee Institute. *Infrastructure Financing: Can the gap be Bridged?* India: KPMG International; 2010.
2. Chan, Chris and Others. *Public Infrastructure Financing: An International Perspective.* Melbourne: Productivity Commission; 2009.
3. Dhar P K. *Indian Economy: Its Growing Dimensions.* Sixteenth Edition. New Delhi: Kalyani Publishers; 2008.
4. Dhingra Iswar C. *The Indian Economy: Environment and Policy.* Twenty-third Edition. New Delhi: Sulthan Chand & Sons; 2009.
5. Government of India. *Report of the Committee on Infrastructure Financing*. New Delhi: Ministry of Finance; 2007.
6. Government of India. *Economic Survey 2009-10.* New Delhi: Oxford University Press; 2010.
7. Government of India. *Investment in Infrastructure during the Eleventh Five Year Plan*. New Delhi: Planning Commission; 2010.
8. Gunjeet Kaur, L Lakshmanan, Raj Rajesh and Naveen Kumar. *Infrastructure Financing: Global Pattern and the Indian Experience.* Reserve Bank of India: 2010.
9. Lall, B Rajiv, and Anand, Ritu. Financing Infrastructure. *Business Standard India:* 2008.
10. Misra SK, and Puri VK. *Indian Economy:Its Development Experience.* Twenty-sixth Edition. Mumbai: Himalaya Publishing House; 2008.
11. World Bank. *India-Financing Infrastructure: Addressing Constraints and Challenges.* 2006.
12. World Bank. *World Development Indicators, 2010.*

The Hindu Tradition: Management Values

K. Lalitha Parameshwari

Abstract

The Importance of religious values though has great impact on the management ethics, has rarely being understood by the Indian business scenarios of today. We find that all religions show a positive relationship with extrinsic work values. Furthermore, we find that religions show a positive relationship with intrinsic work values. We also find that those who report no religious affiliation also view work values positively. We suggest that these results are perhaps a result of the converging effects of globalization. Management researchers are also accurately tring to define and promote these concepts based upon logic and reason. A religious person follows his code of conduct because he believes that it is proper behaviour and reaction to the varying challenges and circumstances which arise during the course of life. Since a religious person does his good deed not necessarily for its own sake, but because he has been instructed to do so by God his act is non-moral. One has to understand the underlying principles mentioned in the religious scriptures and try to make an analysis with relation to the management ethics, so that one will be able to create a relationship between the two.

Introduction

Hinduism, is the predominant faith of India. Taken as a whole, Hinduism is one of the oldest religious traditions in the world. But it is difficult to study, for it is also one of the most diversified religious traditions. Philosophy (*darshana*) in the Hindu tradition means "seeing the truth" and applying this truth to the problems of everyday life. Thus, for Indian thinkers, the purpose of studying philosophy is not merely to gain knowledge, but to discover and live the highest kind of life, the life that will bring permanent self-realization.People must try to establish the truth that exist in the religions and not simply or blind foldedly depend on the spiritual books or testimony of others. Apart from establishing a relationship between spiritual values and management techniques, one should–Myths behind Hindu religion.

One indication of the difficulty of setting forth the central points in Hindu thought is that there are many texts that, collectively, can be called Hindu Scripture. First, there are the Vedas (literally "knowledge" - that is, sacred knowledge). The earliest texts are the *Rig Veda*, a collection of over one thousand hymns addressed to the gods - hymns to Indra, the god of civilization, war, and storm; to Varuna, the guardian of morality; and to many others, most of them now forgotten. Included in the Vedas are the *Brahmanas*, lengthy treatises concerned with the details of the sacrificial ritual administered by the Brahmin class. Finally, in the eighth to fifth centuries B.C.E., there were added to these the most famous of the early Indian writings, the *Upanishads*, which attempted to explain the inner meaning of the reality behind the religious quest in a philosophical manner. All these writings form the essential canon of sacred scriptures in the orthodox Hindu tradition.

In the period following the *Upanishads*, there was, within Hinduism, a great development of devotional religion. This was expressed strikingly in the most famous of Indian

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(Received on 13.12.2011, accepted on 11.01.2012)

scriptures, the *Bhagavadgita,* or "Song of the Lord." There is some doubt as to when the *Gita* was compiled, but it was probably some time during the period 200 B.C.E. to 200 C.E. (the common era, equivalent to A.D.)

No other scripture is more widely read in India today. To read the *Gita* is to be introduced to some of the main themes of Hindu thought as well as to some of the main practices of Hindu life. It also introduces one to splendid Hindu poetry and to the god Krishna. It is convenient to name four major periods of Hindu thought: first, the early period of Vedic polytheism; second, the period of the Vedanta with its descriptions of Absolute Brahman; third, a period beginning about 200 B.C.E., with an emphasis on *bhakti* and last, the modern period, with its response to Western influence.

Brahman and the self

Central to much of Hindu philosophy is the emphasis on the one unchanging reality that transcends space, time, causality, and all particular things. This Absolute cannot be comprehended by human thought or adequately expressed in words and concepts. According to the nondualistic view (which emphasizes the oneness of existence) only Brahman is real, and the individual souls and the universe are illusory veils obscuring Brahman. Closely allied to the concept of Brahman is the concept of the self, or soul, or *atman*. The true self of each person is identical with Brahman. From the transcendental standpoint, the self is immortal, free, and identical with Brahman. The divine nature of the self is veiled, but not destroyed, by false images and ignorance, for it is ultimately without traits and beyond language. The true destiny of the self is the realization of this identity with Brahman. From the phenomenal standpoint, there are many individual selves, enmeshed in the world of affairs and seeking deliverance from the round of births and deaths. Thus we need to distinguish between the real and the empirical self.

What are the relations among Brahman, the self, and the universe that we perceive? A Hindu scholar says: "Brahman is the sole reality, and it appears both as the objective universe and as the individual subject. The former is an illusory manifestation of Brahman, while the latter is Brahman itself appearing under the limitations which form part of that illusory universe." The objects of the empirical world, although of a certain order of worldly reality, are appearances in that they belong to the world of cause and effect, to which Brahman does not belong. The individual self, however, is not illusory in this sense. The self is Brahman appearing under limiting conditions. It is not a phenomenon of ignorance the way physical objects are. Through an intuitive, non-logical experience one realizes the identity of the eternal self and Brahman.

Central values in Hinduism

All Hindu systems of thought seem to agree that there are four main values to be completed and brought to perfection in the course of rebirth. In ascending order of importance they are: (1) *Artha* (wealth) and (2) *Kama* (sensuality). These are the worldly or secular values. They are legitimate if they are kept in their places and do not stifle other values. Material prosperity, good health, and long life are desired by most Indians. However, both the life of activity and renunciation are recognized. (3) *Dharma* (social and individual duties) includes all caste roles and obligations of occupation, gender, kin, generation, and temperament, as well as other ethical responsibilities. (4) *Moksha* (release from finitude and imperfection) is the intrinsic or eternal value, and the supreme spiritual ideal. It gives liberation from the wheel of existence, and cannot be achieved without complete experience and resolution of the other three. Discipline is essential if we are to achieve illumination, and the overcoming of selfishness is essential if we are to realize our genuine self and attain release. Unless a person achieves release in this life, which is

rare indeed, she or he is destined to repeat the round of more existences.

According to Hinduism, no soul is eternally damned. The law of *karma*, the law of sowing and reaping, determines the form that will be taken in each new existence. This is the law of cause and effect in human life. Through our conduct we determine our own destiny in that good *karma* is acquired by living up to our *dharmic* duties and bad *karma* by ignoring or violating our given *dharma*. An unethical life may lead to rebirth below the station of the present life, and a life of goodness may lead to a more favored existence or to ultimate liberation from the round of rebirths. Thus, the doctrines of *karma* and rebirth are said to be grounded in the moral structures of the universe. They permit freedom and ethical advance in that they are under our control and are not determined by cosmic or environmental forces completely beyond our influence.

The concept of the four *ashramas*, or stages in the life of the individual, relates the goal of liberation to the needs and tasks of daily life in society. A man's duties are set by the stage of life at which he has arrived. The four stages are (1) the life of a celibate student under the mentorship of a teacher; (2) a long period of householdership, beginning with marriage, when a person assumes the responsibilities of parenthood and other social obligations and when one provides for those dedicated to the spiritual quest; (3) a period of increased religiosity, when householder duties can be passed on to the next generation, during which one retires to the forest with his wife to practice rituals and for meditation and reflection; and (4) by complete renunciation of family and caste and by practicing austerities and rigid self-control, a person seeks union with Brahman. If the person is successful in the fourth stage, struggle and strife cease and he gains peace and freedom through union with the all-embracing World Soul (Brahman). The inner spirit of humanity is the focus of attention, and its development, illumination, and release are the highest values. These stations were primarily for men. At the time of traditional Hinduism, women were excluded from the more rigorous structures of the *ashramas* and received their spiritual merit from working to uphold the *dharmic* obligations of their husbands.

We propose that there is a positive relationship between Hinduism and both work values. Happiness can be attained through the fulfillment of the desires; that is, extrinsic values. In fact, the latter has played a crucial role in achieving business excellence (Sharma and Talwar, 2004). Hindus have traditionally viewed living the good life through four aims, namely dharma (fulfilling one's duties), kama (pleasure), moksa (achieving liberation), and artha (material prosperity). As such, artha or achievement of material prosperity plays an important role in the Hindu good life. It is thus likely that Hindus pursue extrinsic work values as they are expected and encouraged to accumulate wealth (Gold, 1989) as one of life's stages. However, it is also likely that Hindus look for intrinsic values, such as a job that is interesting and that contributes to society religions seem to view work very similarly provide important contributions both theoretically and practically.. Multinationals are advised to design work environments that respect important religious differences However, these multinationals will nevertheless face workers who favor both intrinsic and extrinsic work values.

Hinduism, Values and Management

Global corporations and governments appreciate the importance of an ethical public appearance. Thus values and ethics for business and government have become important components of management training. The movement for management values originated in the United States, it quickly spread to Europe, and India can hardly be said to lag behind. Indian initiatives in this field receive financial support from enterprises such as the Tata Group, the ONGC (Natural Oil and Gas), and the BPCL (Bharat Petroleum).

The slipping away of public control mechanisms seems to encourage managerial misbehaviour. Promoters of business ethics in the United States and Europe have understood that the growing private sector requires clear formulations of ethically acceptable corporate behaviour. Thus 'values in business', 'values-based management', 'ethical entrepreneurship', and so forth, have entered the market of management teaching. Hindu values and business Concern for ethical corporate behaviour was first expressed in India in the early 1980s. The then Indian Prime Minister, Indira Gandhi, informally urged Swami Yuktananda, a monk and follower of the Shri Ramakrishna movement, to promote Indian values for the moral improvement of Indian management. Indian values, it was claimed, derived from the inclusivist (Hindu) Vedanta philosophy. Vedantic Hinduism (like Christianity in the Western world) in the 1980s came to be regarded as a cultural resource for Indian managers. It was thought that values awareness would prevent corruption. Less corruption in the end meant less financial loss. The target groups for values training were managers of private and public sector enterprises, high-ranking state civil servants, and executives of the Indian Administrative Service. Promoting values in Indian government, however, inevitably has political implications. In the 1990s, the Hindu conservative Bharatiya Janata Party (BJP) came to power at the national level. This boosted efforts to promote Hindu values in management. Professors working at institutes of management in Calcutta, Lucknow, and Ahmedabad began to lecture on Indian (read Hindu) ethics for management and developed special training courses for Indian managers. While the number of courses is steadily increasing, the serious scholarly literature on the subject remains small. One scholar with an international reputation has held undisputed sway over the field since the 1990s: S.K.

The promotion of religion as the fundamental source of ethical behaviour is based on two sociological observations:

(a) the great world religions of Christianity, Islam, Hinduism, and Buddhism have large followings, and are more universal in aim and intent than political or social ideologies;

(b) unlike ideologies, world religions address (or claim to address) issues of ultimate human concern such as life, death, good, evil, and the hereafter. Thus, Hinduism (the religion of about 85 per cent of Indians) provides fundamental Indian values. One may question the need to turn to world religions to seek ultimate values. But so long as religions provide values to millions around the world, academics have reason to study their impact on values discourse. Indian intellectuals who regard themselves as secular and (often) leftist balk at the use of religious texts as sources for values, especially the use of Hindu texts as sources for ethics in business and politics. Their apprehension is not groundless.

Hindutva and management

The most famous and influential representative of the first approach is S.K. Chakraborty. In his courses on values for managers he presents a leadership model that builds upon hierarchy, strict obedience to a boss or leader, rituals, and punishment for those who disobey this leader. In some of his courses and articles Chakraborty has argued for abolishing the present secular constitution and parliamentary democracy, and replacing them with a Hindu constitution and rule by a few wise gentlemen.

Arindam Choudhury in his best-selling book Count Your Chickens Before They Hatch wants Indian managers to act with self-confidence and a sense of initiative. One of Choudhury's Hindu role models is Swami Vivekananda. However, the vocal supporters of egalitarianism and democracy are outnumbered by those who tacitly support hierarchy and authoritarianism. Abdul Kalam, Ex-President of India, has outlined a dream to 'ignite' the minds of youth through

widespread education with the aim to build a technologically advanced nation. In order to realize this dream, government institutions and businesses must work in a socially and economically progressive environment. This requires universal basic education fostering independence of mind, rationality, problem solving, and initiative. In short, a democratic egalitarian temperament is essential to growth in every respect. It is estimated that over 90 per cent of India's work force is barely educated and works in the informal sector. The greatest challenge for the future will be the full mobilization of this work force on a socially just and economically responsible basis. Serious debate on values is indispensable. Indian executives in government and business must reflect on the ultimate ideals that ought to guide the future of India: will the country be transformed into a more democratic and economically equitable society that enables all of its citizens.

References

1. Bell E and Taylor S. From Outward Bound to Inward Bound: The Prophetic Voices and Discursive Practices of Spiritual Management Development. *Human Relations* 2004; 57: 439–66.
2. Boal K. Editorial. *Journal of Management Inquiry* 2000; 9.
3. Cash KC and Gray GR. A Framework for Accommodating Religion and Spirituality in the Workplace. *Academy of Management Executive*. 2000; 14:124–33.
4. Chusmir LH and Koberg CS. Religion and Attitudes Toward Work: A New Look at an Old Question. *Journal of organizational Behavior*. 1988; 9: 251–62.
5. Cullen JB and Parboteeah KP. *Multinational Management: A Strategic Approach*. Mason OH: South-Western Publishing; 2008.
6. RKC Forman. *Religions of the World*. 3rd ed. New York: St. Martin's; 1993. 83.
7. For a more detailed look at these periods, see Klaus K Klostermaier. *A Survey of Hinduism*. Albany: State University of New York Press; 1989.
8. N Smart. *The Religious Experience of Mankind*. 3rd ed. New York: Scribner's; 1985. 126. We advise any student of religion to refer to this book in its most recent edition.
9. M Hiriyanna. *The Essentials of Indian Philosophy*. London:Allen and Unwin;1949.158.
10. See VS Naravane. *Modern Indian Thought: A Philosophical Survey*. London: Asia Publishing House; 1964.
11. S Radhakrishnan and CA Moore. *A Source Book in Indian Philosophy*. Princeton: Princeton University Press;1957. xx-xxvi.

Yield Constraints of Black and Green Grams of Pulses: An Analysis of Small and Large Farmers

D. Amutha

Abstract

Pulses are the major sources of dietary protein in the vegetarian diet in our country. Besides being a rich source of protein, they maintain soil fertility through biological nitrogen fixation in soil and thus play a vital role in furthering sustainable agriculture. The study attempts to focus on the yield constraints of small and large farmers producing black and green grams of pulses in Tuticorin District. The proportionate random sampling technique has been adopted to select 150 each of pulses cultivating farmers from 12 villages. The data relates to the month of February 2012. The Garrett's ranking technique was applied to identify the major constraints to the attainment of potential yield and it was found that severity of disease and pest attacks and water shortage were identified as major constraints for both Large and Small farmers cultivating Black Gram of pulses . In the case Green Gram, Large farmers have reported that the inadequate credit facilities and water shortage to be the main constraints to maximum yield. Similarly, the majority of the Small farmers have identified water shortage as a major constraint. Thus, it may be concluded that severity of diseases, inadequate credit facilities and water shortage were identified as major constraints in the study area.

Key words: pulses, protein, soil fertility, yield, constraints, Garrett's ranking.

Introduction

Pulses are the major sources of dietary protein in the vegetarian diet in our country. Besides being a rich source of protein, they maintain soil fertility through biological nitrogen fixation in soil and thus play a vital role in furthering sustainable agriculture (Kannaiyan, 1999). Increase in yield of subsequent crop to the tune of about 20-40 per cent has been recorded (Pande and Joshi, 1995, IIPR, 1998; 1999). In India, owing to its diverse agro-climatic conditions, pulses are grown throughout the year. Presently, India is the largest producer and consumer of pulses in the world, accounting for about 25 per cent of their global production, 27 per cent of their global consumption and about 33 per cent of the world's area under pulses (FAO, 2008). The growth in production and productivity of pulses has lagged behind the population growth rate which has resulted into a decline in per capita availability of pulses from 66 g/day during triennium ending (TE) 1965 to 33 g/day during TE 2005 (Agricultural Statistics at a Glance, 2007) against ICMR (Indian Council of Medical Research) norms of 40 g/day. The study attempts to focus on the yield constraints of small and large farmers producing black and green grams of pulses in Tuticorin District.

Objectives

The Objectives of the present study are:

- To collect data on the socio-economic structure of pulses cultivators in Tuticorin district.
- To estimate the yield constraints of Large and Small farmers producing Black Gram.
- To analyse the yield constraints of Large and Small farmers producing Green Gram of pulses in the study area.

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(Received on 01.03.2012, accepted on 24.02.2012)

Methodology

Pulses are mainly cultivated in Vilathikulam and Oottapidaram which show more than 70 per cent of area under cereals and pulses in this district and hence the selection of sample villages restricted to these two blocks. Six villages in each block, which account for the highest area under pulses cultivation in the descending order of magnitude, were selected as the study unit for primary data collection. In Vilathikulam Block Vilathikulam Village, Arunkulam, Guruvarpatti, Sivagnapuram, Somikal and Poothanoor and in Ootapidaram Block Kothali, Meenakshipuram, Lingampatti, Nagampatti, Ootapidaram Village and Katunayaganpatti were selected. A list of pulses cultivators in the selected villages was obtained from the records of the Joint Director of Agriculture, Tuticorin. The proportionate random sampling technique has been adopted to select 150 each of pulses cultivating farmers from these 12 villages. The data relates to the month of February 2012.

Discussion and analysis

Out of 300 sample farmer's cultivations pulses, 150 sample farms are under the category of black gram and remaining 150 sample farms come under green gram. In each crop, the sample farm can be divided into two group's namely small and large farmer based on area under pulses. For that, frequency tables were formed in each crop on the basis of area and its cumulative total was also worked out. The farms of less than 5 acres were grouped on small size and farms of more than or equal to 5 acres are grouped as large size. In the black gram, out of 150 sample farmers, 52 (34.67%) belong to small size and remaining 98 (65.33%) belong to large size. In the green gram, out of 150 sample farmers, 47 belong to small size and remaining 103 belong to large size.

The table shows that in Black Gram, 78.67 per cent of the farmers were in the age group of 30 to 50 years. The age group of 40-50 years was relatively lower in the case of Small

Table 1: Age-Wise Distribution of Sample Farmers

Age (in years)	Black Gram (BG)			Green Gram (GG)		
	Large	Small	Overall	Large	Small	Overall
Less than 30	9 (6.00)	5 (3.33)	14 (9.33)	5 (3.33)	3 (2.00)	8 (5.33)
30-40	60 (40.00)	24 (16.00)	84 (56)	60 (40)	25 (16.7)	85 (56.7)
40-50	22 (14.67)	12 (8.00)	34 (22.67)	24 (16)	12 (8.00)	36 (24.)
Above 50	7 (4.66)	11 (7.34)	18 (12.0)	14(9.33)	7 (4.67)	21 (14.0)
Total	98 (65.33)	52 (34.67)	150 (100)	103(68.7)	47(31.3)	150 (100)

Source: Survey Data.
Figures in brackets represent percentages to total.

Table 2: Literacy Levels of Sample Farmers

Literacy Level	Black Gram (BG)			Green Gram (GG)		
	Large	Small	Overall	Large	Small	Overall
Illiterate	3 (2.00)	3(2.00)	6 (4.00)	2 (1.33)	3 (2.00)	5(3.34)
School level	78 (52.00)	36 (24.00)	114 (76.00)	82 (54.67)	23 (15.33)	105 (70.00)
College level	14 (9.33)	12 (8.00)	26 (17.33)	14 (9.33)	18 (12.0)	32 (21.33)
Professional	3 (2.00)	1 (0.67)	4 (2.67)	5 (3.33)	3 (2.00)	8 (5.33)
Total	98(65.33)	52(34.67)	150 (100)	103 (68.66)	47 (31.33)	150 (100)

Source: Survey data.
Figures in bracket represent percentages to total.

Table 3: Size of Operational Holdings of the Sample Farmers

Size of Holdings (in acres)	Black Gram (BG)			Green Gram (GG)		
	Large	Small	Overall	Large	Small	Overall
Less than 1	15(10.00)	-	15(10.00)	13 (8.67)	-	13(8.67)
1-2	25 (16.67)	-	25(16.67)	22(14.67)	-	22 (14.67)
2-5	58 (38.66)	-	58 (38.67)	68(45.33)	-	68 (45.33)
5-8	-	42(28.00)	42(28.00)	-	41(27.33)	41 (27.33)
Above 8	-	10(6.67)	10(6.66)	-	6 (4.00)	6 (4.00)
Total	98 (65.33)	52 (34.67)	150 (100)	103(68.67)	47(31.33)	150 (100)

Source: Survey data.
Figures in bracket represent percentages to total.

farmers (8.00 per cent) while it was 14.67 per cent in the case of Large farmers to their respective totals. The farmers below 30 years constitute only 9.33 per cent to the total. There above 50 years form 12.00 per cent only.

In case of Green Gram, the farmers below 30 years constitute only 5.33 per cent to the total. Those above 50 years form 14.00 per cent only. The respondents between the age group 30 to 50 years constitute 80.67 per cent. The age group of 30-40 years was relatively higher in the case of Large farmer (40.00 per cent) while it was only 16.67 per cent in the case of Small farmers. Comparing these two crops, it is found that the farmers between age group of 30 to 50 years were found high in Green Gram (80.67 per cent) while it was 78.67 per cent in the case of Black Gram.

The table reveals that in Black Gram 76.00 per cent of the farmers in the study area had only school education, followed by those with college level education (17.33 per cent). The illiterates form 4.00 per cent to the total. The school level education percentage was higher among Large farmers (52.00 per cent) than among Small farmers (24.00 per cent), while in the case of college level education, the Large farmers (9.33 per cent) was considered to be higher than the Small farmers (8.00 per cent).

In Green Gram, farmers having the college level education form 21.33 per cent to the total. It was found that 70.00 per cent of the farmers are the study area had only school education, followed by illiterates (3.34 per cent). The school level education percentage was higher

Table 4: Experience of Sample Farmers in Pulses Cultivation

Experience in Years	Black Gram (BG)			Green Gram (GG)		
	Large	Small	Overall	Large	Small	Overall
Less than 5	10(6.67)	4 (2.67)	14(9.33)	4(2.67)	5 (3.33)	9 (6.00)
5-10	26(17.33)	10(6.67)	36(24.00)	27(18.00)	15(10.00)	42 (28.00)
10-15	57 (38.00)	36(24.00)	93(62.00)	64(42.67)	23(15.33)	87(58.00)
15-20	5 (3.33)	2 (1.33)	7 (4.67)	8(5.33)	4(2.67)	12(8.00)
Total	98 (65.33)	52(34.67)	150(100)	10(68.67)	47(31.33)	150 (100)

Source: Survey Data.
Figures in bracket represent percentages to total.

among Large farmers (54.67 per cent) than among Small farmers (15.33 per cent) respectively.

Black Gram was found to be high in school level educated farmer (76.00 per cent) when compared with Green Gram (70.00 per cent). And illiterates are low in Green Gram (3.34 per cent) when compared with Black Gram.

The table reveals that in Black Gram, nearly 65.34 per cent of the operational holding was below 5 acres and remaining 34.66 per cent were above 5 acres. Among Large farmers, the dominant operational holding was between 2-5 acres (38.67 per cent) while in the Small farm, it was 5-8 acres (28.00 per cent) to the total.

In the case of Green Gram, nearly 68.67 per cent of the operational holding was below 5 acres. The remaining 31.33 per cent belong were above 5 acres. Among Large farmers, the dominant operational holding was between 2-5 acres (45.33 per cent) while in the Small farms, it was 5-8 acres (27.33 per cent) to the total.

Comparing these two crops, Black Gram is low in operational holdings below 5 acres (65.34 per cent) while Green Gram is high in operational holding below 5 acres (68.67 per cent) respectively.

It is observed from the table that in Black Gram 24.00 and 62.00 per cent of the farmers have had the experience of 5-10 years and 10-15 years respectively. While 9.33 per cent of farmers had the experience of less than 5 years and only 4.67 per cent of farmers have experience of 15-20 years.

In Green Gram 28.00 and 58.00 per cent of the farmers had experience of 5-10 years and 10-15 years. While 8.00 per cent of the farmers had experience between 15-20 years and only 6.00 per cent had experienced less than 5 years.

Comparatively, Green Gram has 58.00 per cent of farmers with experience of 10-15 years, whereas in Black Gram 62.00 per cent of farmers had experienced between 10 to 15 years.

Yield Constraints

The factors that prevent farmers from achieving the potential yield under farmer condition are known as 'yield constraints'. There are 3 kinds of constraints (K. Kalirajan, 1980) which cause yield gap. They are (1) environmental constraint, (2) biological constraints and (3) socio-economic constraints. Environmental constraints are caused by (i) environmental difference and (ii) non-transferable technology. Experiment stations are usually located in places ideal for farming, whereas the same is not true for farmer's field. Moreover, there are hardly any cost output constraints at these centres, while farmers often encounter such problems at farm level. Above all, some of the technologies adopted at the experiment station may not be transferable to a farmer's field. These constraints cause Yield Gap I. Biological constraints include (i) variety, (ii) weeds, (iii) diseases and insects, (iv) problem soil, (v) irrigation facilities and (vi) soil fertility. By and large, these constraints arise from the non-application of the required inputs. Experiment

Table 5: Yield Constraints of Large Farmers Producing Black Gram (BG)

Constraints	Mean Score	Rank
Severity of disease and pest attacks	64.75	I
Water shortage	58.64	II
Inadequate credit facilities	49.36	III
Non- availability of input (Seeds)	40.15	IV
Weeds	34.21	V
Traditional methods	31.15	VI

Source: Survey Data.

Table 6: Yield Constraints of Small Farmers Producing Black Gram (BG)

Constraints	Mean Score	Rank
Severity of disease and pest attacks	61.24	I
Water shortage	52.63	II
Inadequate credit facilities	43.44	III
Non- availability of input (Seeds)	41.15	IV
Weeds	36.24	V
Traditional methods	31.49	VI

Source: Survey Data.

Table 7: Yield Constraints of Large Farmers Producing Green Gram (GG)

Constraints	Mean Score	Rank
Inadequate credit facilities	58.15	I
Water shortage	45.99	II
Non-availability of inputs (Seeds)	35.64	III
Severity of disease and pest attacks	31.49	IV
Traditional methods	30.19	V
Weeds	26.62	VI

Source: Survey Data.

station may not face such problems, while farmers often face them at the farm level.

Socio-economic constraints arise from (i) costs and returns, (ii) credit problems, (iii) tradition and attitudes, (iv) knowledge and (v) input availability of institutional facilities. It is the outcome of these constraints which prevent the farmers from adopting the technology as recommended. A farmer may consider the economic viability of following the new technology in terms of its cost and returns. Some farmers may not like to give up their traditional practices. Moreover, some aspects of the technology may not be understood by them. It also results from lack of institutional facilities like non-availability

Table 8: Yield Constraints of Small Farmers Producing Green Gram (GG)

Constraints	Mean Score	Rank
Water shortage	53.63	I
Inadequate credit facilities	45.15	II
Severity of disease and pest attacks	40.61	III
Non-availability of inputs (Seeds)	32.15	IV
Weeds	30.62	V
Traditional methods	22.64	VI

Source: Survey Data.

of inputs and credits. Biological and socio-economic constraints together contribute towards Yield Gap II.

Garrett's ranking technique was adopted to identify the main constraints to potential yield in the study area. The sample farmers were asked to rank the constraints faced by them as per priority. The order of merit assigned to each constraint by the respondents was converted into scores by using the formula

$$\textit{Per cent position} = \frac{100\ (Rij-0.5)}{N_j}$$

where

R_{ij} = Rank given for the i^{th} factor by j^{th} farmer and

N_j = Number of factors ranked by j^{th} farmer.

The per cent position of each rank thus obtained was converted into scores by referring to Garrets ranking table. The scores of all respondents for each factor was then added together and divided by the number of respondents experiencing that particular constraint. The mean scores of each factor thus arrived at were arranged in a descending order and the corresponding ranks allotted.

The farmers cultivating pulses reported six factors among the various biological and socio-economic constraints as the major yield constraints which limited them from achieving the potential yield in the study area. It included water shortage, severity of disease and pest attacks, weeds, credit, non-availability of inputs (seeds) and traditional methods.

It is inferred from the table that the severity of disease and pest attacks was ranked first followed by water shortage. Inadequate credit facilities were ranked third and non-availability of inputs (seeds) ranked fourth. Weeds and traditional methods were ranked fifth and sixth respectively.

It is found from the table that the severity of diseases and pest attacks was ranked first followed by water shortage. Inadequate credit facilities were ranked third and non-availability of inputs (seeds) ranked fourth. Weeds and traditional methods were ranked fifth and sixth.

It is inferred from table that the inadequate credit facilities were ranked first followed by water shortage. Non-availability of input (seeds) was ranked third and severity of diseases and pest attacks ranked fourth.

Traditional methods and weeds were ranked fifth and sixth.

It is found from table that the water shortage was ranked first followed by inadequate credit facilities. Severity of disease and pest attacks was ranked third and non-availability of input (seeds) ranked fourth. Weeds and traditional methods were ranked fifth and sixth.

Conclusion

The Garrett's ranking technique was applied to identify the major constraints to the attainment of potential yield and it was found that severity of disease and pest attacks and water shortage were identified as major constraints for both Large and Small farmers cultivating Black Gram of pulses . In the case Green Gram, Large farmers have reported that the inadequate credit facilities and water shortage to be the main constraints to maximum yield. Similarly, the majority of the Small farmers have identified water shortage as a major constraint. Thus, it may be concluded that severity of diseases, inadequate credit facilities and water shortage were identified as major constraints in the study area.

References

1. IIPR. *Technology for Increasing Pulse Production in India*. Kanpur: Indian Institute of Pulses Research; 1998.
2. K Kalirajan. The Contribution of Location Specific Research to Agricultural Productivity. *Indian Journal of Agricultural Economics* 1980; 35(4): 8-16.
3. Kannaiyan S. *Bioresources Technology for Sustainable Agriculture*. New Delhi: Associated Publishing Company; 1999. 422.
4. Maheswari R. *Seed Production Technology in Soybean under Rice fallow and Methods to Control seed detenoration in Soybean CV Col*. Glycine max L Merrill M.Sc. (Agri). Thesis, Tamil Nadu Agricultural University, Coimbatore. 1996.
5. Pande SP and Joshi PK. *Constraints and Prospects of Legumes in Northern India and the Tarai Region of Nepal*. ICRISAT, Patancheru, Hyderabad.1995.
6. *Reddy A A. Impact Assessment of Pulses Production Technology. Research Report No 3, Indian Institute of Pulses Research, Kanpur.2006.*
7. Reddy AA. Pulses production technology: Status and way forward. *Economic and Political Weekly* 2009; 44(52): 73-82.
8. Sathe D and Sunil A. Liberalisation of pulses sector: Production, prices and import. *Economic and Political Weekly* 2004; 3391-3397.

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[1] Flink H, Tegelberg Å, Thörn M, Lagerlöf F. Effect of oral iron supplementation on unstimulated salivary flow rate: A randomized, double-blind, placebo-controlled trial. J Oral Pathol Med 2006;35:540-7.

[2] Twetman S, Axelsson S, Dahlgren H, Holm AK, Källestål C, Lagerlöf F, et al. Caries-preventive effect of fluoride toothpaste: A systematic review. Acta Odontol Scand 2003;61:347-55.

Article in supplement or special issue

[3] Fleischer W, Reimer K. Povidone iodine antisepsis. State of the art. Dermatology 1997;195 Suppl 2:3-9.

Corporate (collective) author

[4] American Academy of Periodontology. Sonic and ultrasonic scalers in periodontics. J Periodontol 2000;71:1792-801.

Unpublished article

[5] Garoushi S, Lassila LV, Tezvergil A, Vallittu PK. Static and fatigue compression test for particulate filler composite resin with fiber-reinforced composite substructure. Dent Mater 2006.

Personal author(s)

[6] Hosmer D, Lemeshow S. Applied logistic regression, 2nd edn. New York: Wiley-Interscience; 2000.

Chapter in book

[7] Nauntofte B, Tenovuo J, Lagerlöf F. Secretion and composition of saliva. In: Fejerskov O, Kidd EAM, editors. Dental caries: The disease and its clinical management. Oxford: Blackwell Munksgaard; 2003. p. 7-27.

No author given

[8] World Health Organization. Oral health surveys - basic methods, 4th edn. Geneva: World Health Organization; 1997.

Reference from electronic media

[9] National Statistics Online—Trends in suicide by method in England and Wales, 1979-2001. www.statistics.gov.uk/downloads/theme_health/HSQ20.pdf (accessed Jan 24, 2005): 7-18. Only verified references against the original documents should be cited. Authors are responsible for the accuracy and completeness of their references and for correct text citation. The number of reference should be kept limited to 20 in case of major communications and 10 for short communications.

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