

# Evolving Stress, Chaos and Entropy in Farmers' Psyche: The Pedagogy of Disillusionment towards Indian Farming

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**Abstract**—Both the farmers and the farm economy of India have enough reasons to be called, fatigued and disillusioned, by text and dictum. For more than 2.5 lacks farmers committed suicides, certainly outnumbered the people killed in any big war between nations, we have remained enough timid to empirically prove that it was another war against humanity, where those who toil hard to ensure food security of a nation, are fallen victim to ruthless insecurity and destroy their own lives. The stress, chaos, entropy, and also the dissonance being inflicted into the psyches of farmers in India, have seldom been researched from an ecological point of view. If a farmer has to reel constantly under stress, no NPK can reach the field to cause the golden harvest. The present study has dealt with the possible reasons and perceptions after and on the dissonance, disillusionment and decadence of the agricultural production process and its sociological balances. Among the selected variables for the study in predicting Dissonance and Disillusionment (Y1), statistical analysis elicits the fact that total annual income(X9), Per capita annual income(X10), scientific orientation(X13), economic motivation(X16) etc. are mostly responsible. Some axiomatic interpretation suggests that, We should look forward to some emerging issues that can play a healing role in the contextual background of this hard reality. A strengthened supply chain is a earnestly desired one for the farmers where the value addition procedure can make them benefitted too fetching some more hard cash. Moreover the transformation of the biological production to entrepreneurial product can bring them in the position to cope up a bit with the ruthless insecurity. The new genre of extension research should throw lights on creating a resilient model for better socialization of technology otherwise the perplexed horse will be just limping without progress.

**Keywords:** *Stress, chaos, Dissonance, Disillusionment, social entropy, socialization of technology.*

## 1. INTRODUCTION

Agriculture has always been celebrated as the primary sector in India. India is an agrarian economy, which means, agriculture is the pre-dominant sector of the Indian economy. True to this, even to this day, in spite of the Indian economy

opening out to the world and globalization, close to 70% of the population still depends on agriculture for its livelihood. Agriculture in India is the means of livelihood of almost two thirds of the people. It has always been most important economic sector in India. India's dramatic success in green revolution during 60's makes clear that rural transformation cannot be achieved without development of farmer's capability and resource mobilization for agriculture. Attention was paid to development of farmer's capability by resource mobilization.

## 2. RATIONALE OF THE STUDY

The India who had to beg with food bowl in the 1950-60's to feed her teeming millions, has become the world's second largest producer of Rice and Wheat, and transformed herself from a food importer to a food exporter today. But still the situation is not satisfactory rather devastating. Around 60 million people have been displaced by conflicts around the world, pushing refugee flows to record levels that are some 50 percent higher than during World War II. This startling new era of worldwide displacement – one in every 122 people is now either a refugee, internally displaced, or seeking asylum – will have dire consequences on global food security in the months and years to come. Already hundreds of millions of people go to bed hungry every night.

This study is primarily an attempt to highlight the stress, chaos, entropy within farmers and their relationship with sustainable agriculture aspects including food security. The scientific data and research in this domain in India is scant; therefore paucity of literature pertaining to these issues appears to be a virtual constraint to further elucidate the topic. The study evaluates and develops framework based on the gaps in infrastructure and risk based approach in the both implementation and enforcement.

### 3. OBJECTIVES

Followings are the objectives of the study

1. To highlight and examine the concepts of stress, chaos, entropy in farmer's mind and its impact on him.
2. To focus on their relationship with sustainable agriculture and food security
3. To empirically study the issues of stress, chaos, entropy and their impact on Disillusion, Off farm Migration and in some instances even Farmer's Suicide based on farm level interaction.
4. To recommend and suggest some issues that can heal the situation to some extent.

#### The Methodology

##### Concept Building

A concept is an abstraction or generalization from experience or the result of a transformation of existing ideas. The concept is instantiated (reified) by all of its actual or potential instances, whether these are things in the real world or other ideas. Concepts are treated in many if not most disciplines both explicitly, such and implicitly. In informal use the word concept often just means any idea, but formally it involves the abstraction component. In this paper the authors have tried to build a multifarious and multidimensional frame consisting of some emerging concepts related to the topic. for this, It has followed the process of axiomatic discoursement.

##### Concept Refinement

Having collected the data from the farmers, the concepts was refined with consultations with different agricultural experts. In this aspect we also have taken help of different portals related to this issue. We tried to match the copybook concept with the field reality to explore the deviation.

##### Opinion and View Integration

Having opined the ancillary views we have taken the responses of many agricultural officers. experts of SAU, and scientists to review that of our opinion and to integrate something innovative.

##### Locale of the study

Data were collected from 130 agricultural farmers of Jamne Gram panchayat area with special attention to Fingtore village of Labpur block of Birbhum in West Bengal. The block was selected for 3 reasons.

- Here the farmers were trained to move from organic farming to chemical farming,
- from traditional crop (paddy, jute, vegetables) to non-traditional crops (wheat, potatoes, mustard etc.) and

- The area was very close to Bolpur (Fingtore is my native village also) by road.

##### Collection of data

Focused group discussion was conducted initially to prepare introductory schedule. The meeting was held on 17th November, 2015. Meeting was held in a cottage. .

##### Empirical Results and Discourses

##### Measures and tools:

##### Demographic and agricultural variables:

Concerned Information were taken as some variables like

Age, Number of crops, Educational levels, Types of crop production, Family size, Land sizes These were assessed using introductory schedule. As local people produced paddy, jute, vegetables, mustard and wheat crops, only these crops were used in the schedule. These variables have been purposefully chosen as these can make us reach to the invible factors we are trying to find out.

##### Stress

While interviewing with the farmers various stress situations they are facing in everyday situation speacially related with agricultural wok are noted and the ill effects of the strains are carefully observed. 3 point rating scale categories of stress level were (i) Severe

(ii) Moderate

(iii) Low.

Stress Levels	Respondents	Percentage
Severe	36	27.69
Moderate	68	52.31
Low	26	20.00

##### Self-efficacy:

Following the interview with farmers, agricultural officers and members of KPS (krishi prajukti sahayak) we assessed to what extent farmer has belief in self recognition, curiosity to know, in abilities to compete, to consider new farming method as challenging, proactive, to imitate new skills and abilities to understand social needs. The 5 point rating categories are

(i) To a greater extent (iv) less extent

(ii) Great extent (v) least extent

(iii) Neither agree nor disagree.

High score indicates high self-efficacy level.

Levels Of Self Efficacy	To a Greater Extent	Great Extent	Neither Agree nor Disagree	Less Extent	Least Extent
Respondents	6	19	32	53	20
Percentage	4.615	14.615	24.615	40.769	15.385

## Disillusionment

Another issue included in that schedule that their growing unwillingness towards the farm practices. Some questions related to their satisfaction, profit level, encouragement for the next generation also asked to get an idea to the extent of their disillusionment.

### Off farm migration

A part of the interview also intended to explore their proneness to the other sectors instead of farming. What making them compelled to migrate, and if so, what are the facilities they are getting there. In this way the tendencies towards off farm migration was tried to be captured. They were given some choices and asked to choose one in which they want to migrate having these strenuous situation.

Choices for Migration	Artisans	Pottery (specially making earthen God)	Masonry Work	Casual Laborers	others
Respondents	12	54	37	23	4
Percentage	9.23	41.54	28.46	17.69	3.08

Here we see that the maximum tendencies towards pottery (41.54%) due to its off seasonal work opportunity, lucrative remuneration and less strenuous work. Masonary work (28.46%) and Casual Laborers (17.69%) follows it.

## Conceptual Framework

### Stress in Agriculture

The very nature of farming itself is the cause of many strains for farming families. Farming can be an isolating profession, as farmers traditionally work long hours, outside, often in bad weather and alone. A farmer takes all the necessary steps to insure proper nourishment of the attempts that he raises and then sells the items to purchasers.

A spokesperson for the Samaritans, which handles many calls from stressed farmers, says: 'There is the fortress farming mentality – work is home and home is work. There is nowhere to get away from it all–nowhere to escape from the same mindset.'

An additional stress for many farmers is the speed of change within the industry over the last 10 years. Now government and EEC regulations have brought with them mountains of paperwork which many farmers find stressful. At the same time, farming families have faced critical public opinion and press coverage in recent years. Caroline Davies, director of the Rural.

Stress Information Network (RSIN), says: 'Farmers are at a very vulnerable stage, they are exposed to a lot of criticism, and they do feel that society is against them.'

A state of stress exists when unusual or excessive demands threaten a person well being or integrity. Extraordinary efforts are needed to master the situation and there is the danger that coping capacities will be overwhelmed with the consequence

of disturbed functioning ,pain or anxiety , illness or even death. Stress defined neither by the person (coping resources ego strength etc.)Nor by his reactions (stress responses, but rather by the inter play of the three.)

Stress can originate in physiological, psychological and social condition and threaten the integrity of in its body the personality or the social system. Threat can disturb psychological well being and psychological functioning. Social institutions produce psychological stress.'

### Disillusionment and off farm migration

Literally "Disillusionment" means a feeling of disappointment resulting from the discovery that something is not as good as one believed it to be. We are here to discuss over the unwillingness of Indian Farmers to be attached with farming activity. Thoroughly chased by the aforesaid stress factor they are not all doing their farming with a interest rather as a compellation.

This gradually leads them to the migration towards the other sectors apart from agriculture that is off farm migration is taking place as those are seeming lucrative to them.

### Self Efficacy of Farmers and Its impact towards Disillusionment

Self Referent thoughts play a very important role in various psychological aspects. Bandura (1977) introduced the concept of perceived self efficacy with reference to cognitive behavior modification. Self Efficacy is a key contract in social cognitive theory.

Wood and Bandura(1989) defined self efficacy as " beliefs in one's capabilities to mobilize the motivation, cognitive responses, and courses of action needed to meet given situation demands". Exposition of different information and adoption of new technology are assumed to develop farmer's self-efficacy. Self-efficacy of farmer refers to judgment of his capabilities to organize and execute courses of action required to attain designated types of agricultural performance. Self-efficacious farmers have belief that they are more competitive, challenging, recognized, curious to know farming practices, able to perceive environmental uncertainty, motivated to learn new skills for adaptation and able to understand social needs easily. When farmers have lost such belief, his self-efficacy system deteriorates and prolonged deterioration leads him to commit suicide or to take some other profession. The studies related to farmer's suicide provide conceptual base to understand different correlates of self-efficacy.

### Farmer's suicide

Authors identified some psychological factors as loss of self-esteem, ego and prides; feeling of shame and insult; feeling hurt; suffering from alienation characterized by helplessness; isolation, meaninglessness ,powerlessness ,and self-estrangement. Assuming suicide is a solution for insoluble

problem and termination of distressing thoughts and feelings, farmers committed suicide.

Here under after thorough observation of the situation it has been noted 12 agro-economic reasons for committing suicides. They are:

1. Chronic drought and scanty rainfall;
2. Lack of underground water;
3. High cost of cultivation with inadequate reasons;
4. Crop failures and low yields;
5. Lack of remunerative prices for the farm produce;
6. Spurious fertilizers, pesticides and seeds;
7. Lack of sufficient institutional credit flows;
8. High rates of rent charged by land owners and high interest rates charged by private money lenders;
9. Failure of agriculture related cooperative banks in lending money to farmers;
10. Lack of sustainable irrigation facilities;
11. Failure in their attempts to generate water through wells and bore wells;
12. Inadequate and unorganized agricultural market facilities for farmers etc.

(source; kumar & bhat ,2007, farmers' suicide in Andhra Pradesh)

From the data collected through interview we tried to arrange the most prioritized reasons to make themselves extremely stressed which may led to a tendency of suicide ,in a rank order.

Reasons for Committing Suicide	Abrupt Climate Change	Spurious Inputs	Lack of Institutional Credit	Lack of Remunerative Price	Unorganized Market	other
Respondents	12	19	27	51	17	4
Percentage	9.23	14.62	20.77	39.23	13.08	3.08
Rank	5	3	2	1	4	6

### Food security and Social entropy

Food security as a concept originated only in the mid-1970s, in the discussions of international food problems at a time of global food crisis. The initial focus of attention was primarily on food supply problems - of assuring the availability and to some degree the price stability of basic foodstuffs at the international and national level. That supply-side, international and institutional set of concerns reflected the changing organization of the global food economy that had precipitated the crisis. A process of international negotiation followed, leading to the World Food Conference of 1974, and a new set of institutional arrangements covering information, resources for promoting food security and forums for dialogue on policy issues.

The initial focus, reflecting the global concerns of 1974, was on the volume and stability of food supplies. Food security was defined in the 1974 World Food Summit as: "availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices"

This definition is again refined in The State of Food Insecurity 2001: "Food security [is] a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life"

This new emphasis on consumption, the demand side and the issues of access by vulnerable people to food, is most closely identified with the seminal study by Amartya Sen. Eschewing the use of the concept of food security, he focuses on the entitlements of individuals and households.

The post world war II shift in the development world to intensive farming systems with modern chemical and energy technology led to major increases in production. These systems maximized production through specialization, increased sale of production units minimized labor requirements and maximized use of technological inputs.

Farming system in India has been characterized with high level of adoption, rejection and discontinuance. Agriculture in India demands transfer of technology, external supply of inputs as well as knowledge, where rural people have become mere recipient of input and technology. In India in general and West Bengal in particular through the continuous imposing of knowledge and motivating the rural people a gap has been found between motivation unleashed and accomplished made and there is a gradual dissolving of the most advance societies due to intrinsic disorder that may be referred to as social entropy.

Social entropy is a macro-sociological system theory. It is a measure of the natural decay within a social system. It can be defined as the decomposition of social structure or of the disappearance of social distinctions. Social entropy is the amount of motivation unavailable for performing in system. Mitchel (2009) studied on a village (Jacobs) in 1998 through creative destruction developed and predicted the fate of communities that became the base of their development on the co-modification of rural heritage.

Farming systems deals with production system and production function, it is load based, crop based, and natural resource base and thus crop productivity is a function of physical, biological and social subsistence. The stage of equilibrium, physical, biological and social is the prime concern of any system, it is more important for extension system because it aims at adding disequilibrium to a depletive function e.g. (Poverty) in order to invite neo- equilibrium (sustainable livelihood). People are more concerned about the conservation of energy that to in terms of fuel energy or electricity, power etc but seldom we speak out conservation of social energy and recycling of motivation. Methodology for conservation of social energy: Training; education; meditation; simulation; psychotherapy; stimulation.

The lack of sustainability of the industrial approach to agriculture is not a matter of personal opinion. It is a direct consequence of the most fundamental laws of physics, the

laws of thermodynamics. The sustainability of agriculture, like the sustainability of any other type of development, ultimately depends upon the use of energy, because anything that is useful in sustaining life ultimately relies on energy. All useful material things – food, clothes, houses, automobiles – require energy to make and energy to use. And all human energy – working, managing, and thinking – comes from the energy in things people eat, wear, or use. Physical scientists lump all such useful activities together and call them “work.” All work requires energy. And most important, each time energy is used to perform work, some of the *usefulness* of the energy is lost. In performing work, energy is always changed from more-concentrated to less- concentrated forms.

However, the total energy contained in matter and energy always remains unchanged. This is the first law of thermodynamics, the law of energy conservation, as in Einstein’s famous  $E=MC^2$ . At first, it might seem that energy could simply be recycled and reused forever. If so, sustainability would be inevitable

However, once energy is used to perform work, before it can be used again, it must be re concentrated and restored, which inevitably requires energy. The energy used to reconcentrate and restore energy, is simply no longer available to do anything else. It has lost its usefulness; meaning it has lost its ability to perform work. A sustainable agriculture must be fundamentally different from the mechanistic paradigm of industrialization. Sustainable agriculture must be based on the paradigm of living systems. Living things are self-making, self-renewing, reproductive, and regenerative (Ikerd, *sustainable capitalism, chapter 5*)

### Chaos and Indian Farming

Literally chaos means complete confusion and disorder: a state in which behavior and events are not controlled by anything.

In particular, a chaotic dynamical system is generally characterized by -

1. Having a dense collection of points with periodic orbits,
2. Being sensitive to the initial condition of the system (so that initially nearby points can evolve quickly into very different property sometimes known as the butterfly effect, and
3. Being topologically transitive.

Now we will discuss why we are considering the Indian Farmers a Chaotic system nowadays.

Mainly Two types of chaos are found within farming system

- **Institutional chaos** is being emphatic nowadays. According to Horton(1964) “an institution is an organized system of social relationships.....”. any disorder in that system produces chaos.

- **Social chaos** is another type in which the social system and the interrelationships amongst its various components get hindered due to some dysfunctions.

### Chaos theory : an innovative tool for contemporary issues

Chaos theory is the study of complex, nonlinear, dynamic systems. The field was pioneered by Lorenz (1963), who was studying the dynamics of turbulent flow in fluids. Although we all recognize the swirls and vortices that characterize turbulent flow, the complexities of turbulent flow have confounded mathematics for years.

Chaos theory, which is the study of nonlinear dynamic systems, promises to be a useful conceptual framework that reconciles the essential unpredictability of firms/Industries with the emergence of distinctive patterns (Cartwright, 1991). Although chaos theory was originally developed in the context of the physical sciences, Radzicki (1990) and Butler(1990) amongst others have noted that social, ecological and economic systems also tend to be characterized by nonlinear relationships and complex interactions that evolve dynamically over time.

Proponents of chaos theory enthusiastically see signs of it everywhere, pointing to the ubiquity of complex, dynamic systems in the social world and the resemblance between patterns generated by stimulated nonlinear systems and real time series of stock exchange or commodity prices. From a theoretical perspective, chaos theory is congruous with the postmodern paradigm, which questions deterministic positivism as it acknowledges the complexity and diversity of experience. While postmodernism has had a profound influence on many areas of social science and the humanities, it has been neglected by organization theorists until very recently (Hassard and Parker, 1993).

Despite its attractions, the application of chaos theory to the social sciences is still in its infancy, and there are those who think that expectations are too high (Baumol and Bnhabib, 1989)

### Discussion and Interpretation

#### The Sources Of Stress

Having discussed with the village people it is clearly evident that based on some reasons mainly they are not satisfied with the farm practices. Their grievances just were being erupted. Under here the pitfalls are discussed –

1. A small land holding and the prevailing system of Barga is not providing them with profit to maintain their livelihood rather in some instances they are being failed to meet their operational cost.
2. When compensation scheme of Govt, implemented on the locality (recently a central scheme of compensation for flood affected area has been given), proper distribution of

that was not there rather a political interference made it a extreme biased one..

3. Sometimes there is not available sufficient food for all members of home around 965 days of the year. So lack of liquid money makes them suffered with pathetic impoverishment.
4. Nowadays the rising cost of electricity used in agriculture is a severe problem for them as they are continuously being affected indirectly with the irrigation water taken from submersible.
5. The inevitable risk factor associated with the farm in various way like natural calamity, frost and flood are very common.

They added also that the lower socio economic conditioned people with some conservative mentality within are much sufferer than that of those of scheduled tribes and others people cause

- Their family women can add something extra income to their household
- The case of distress sale is not so severe
- They can act frequently as agriculture laborers to attain Extra income

### **Coping with stress in farming**

No matter how stressed farmers feel, they can't just call in sick. 'Practically, even if you are in the worst state of stress and shock, you still have to go outside every day, feed the sheep, milk the cows and tend to the animals,' says Brian Warren, a dairy farmer in Devon and a representative of the Farm Crisis Network which helps farming families who are experiencing problems. This culture of just getting on with things can mean that stress goes ignored. And it is not just the farmers themselves who take the brunt of the strain, but also wives and families.

Often, says Caroline Davies of the RSIN, it is the women who make the first move to deal with the situation. 'With the men, the initial problem is getting them to speak. It is women who will pick up the phone and talk when they are under stress,' she says. Many calls to the RSIN come from women worried about their husbands or partners, who just won't talk about things, she adds.

Talking to someone is always the first important move towards coping, The Samaritans advice. 'The burden of uncertainty and distress caused by another setback can be overwhelming. Talking to someone can be the first step forward,' says a spokesperson. There are several organizations dedicated to helping farmers cope with stress and providing stress counseling. Two of those organizations, the Farm Crisis Network and the Royal Agricultural Benevolent Institution, suggest the tips to help farmers cope.

### **Disillusionment and off farm Migration**

So it is well understood that they were not at all satisfied with farm practice. Rather gradually a hidden unwillingness and repulsive factor accrued within. Which were to be erupted in front of interviewer when they were questioned.

Following this disillusionment farmers discourage their next generation to go for farming rather they would like to go for any job which would provide them with liquid cash instant. In this way off farm migration took place. The alternatives in which frequent migration is evident those are

- Artisans
- Pottery work (specially making earthen god of Hindus)
- Masonry work
- Even working as casual laborers

In some extreme cases the situation becomes more devastating where they could not help but committing suicide.

### **Recommendations**

The interview schedule itself contained one issue to recommend something for themselves and simply those are stated as it was told by the interviewed farmers

- Though subsidization the fertilizer price should be cut down
- The selling price of paddy should be increased
- The price of electricity in agricultural irrigation
- Availability of the ago laborers should be increased
- Krishi loans should be properly distributed

But here, Authors are recommending some issues in the following heading which are badly needed to be taken care of.

### **The Issues, that Speaks a Dictum :-**

**Equal Monthly Return (EMR)** is an important issue that remains an illusion yet for the farmers as in other profession there is a certain monthly return whereas the agriculture sector provides it when the crop is harvested. It may be after 3 months , 6 months or even more. So. There should be a provision of the Monthly return of the farmers as they can sustain to their livelihood requirements.

**More Biological production but very little value addition** i.e, less than 2% contribution to global agriculture produce.

Agriculture industry should **be lucrative and healthy** to be attractive to come closer. The existing health is miserable in this aspect that the farmers who has a slightest chance to migrate to an off farm economy they are finding it more profitable.

Agriculture industry should **cover a larger area** to be covered up. As we all know the economic rationale behind the Average cost of production being reduced as the Quantity increased.



Agriculture should bear some **social status** as many of the educated farm family member is not finding it prestigious to be attached with this sector, which is so called the primary sector of India.

**Drudgery Reduction technologies** should be adopted very intensively as many people nowadays finding farm work too strenuous a job to be done in comparison with the other.

**Sufficient Market access** should be there as we found there for many villagers they are producing their crop in a satisfactory level but still are being compelled to distress selling due to lack of market access.

Apart from the monthly return, the **Relative value of Profit** is an another issue which should be taken care of to allow the farmers to be in a higher position.

No other but this industry certainly has a **gestation period** with no return. so some initiatives to be taken up for them.

Small holdings are not bad but it is found to be **extremely fragmented** that is dangerous.

**Climate change** offers more stress, more migration , less mitigation and stability.

**Intrusion of heavy metals** and its subsequent **biomagnifications** leads to occurrence of Carcinoma, PSO ( Poly Cystic Ovary ) and Diabetic Problems.

#### **Expected Contribution of this paper**

Modern day extension science needs more of innovative thinking to touch and deal with the ground realities.

Unless the residual disorders in the form of chaos/entropy/disillusionment is removed or redressed, no new order can work properly with the same social ecology in function.

The back crosses analysis of rejection/ discontinuance can also provide the most realistic data to estimate the reasons why they should adopt the proposed practices.

This discourse will help understand the resilience of a social ecology, taken both the embedded and residual energy, vis-à-vis motivation into account.

Unless a system behavior is in critical examination, it is really difficult to find out the reasons and ground for effective intervention.

#### **4. CONCLUSION**

"We live in a world where nearly 800 million people go to bed hungry every night. Nearly 1.2 billion people remain extremely poor, struggling to care for their families." Said IFAD's President Kanayo F. Nwanze. With over three-quarters of the world's poorest people living in the rural areas of developing countries, it is worthy to be discussed why investing

in rural people is crucial to helping the world overcome these global challenges.

It is to be concluded that the situation prevailing there is not so much healthy condition for a farmer and the authorized govt officials are saying that they are quiet helpless in this situation because they are not getting the root to be treated with. But the fact is that farmers are losing their self efficacy in farming practice and gradually getting disillusioned. In this way suddenly they are being migrated to any off farm economy for a lucrative cash receipt and in a more severe form some ill-fated are compelled to commit suicide. The recommendations made by the farmers for themselves as well as the authors should be reviewed carefully.

#### **REFERENCES**

- [1] Acharya, S K; Sharma, N K; Mishra, G C. (2015). Social Entropy, Process of Technology Socialization and the Indian Agriculture; Krishisanskriti Publication, New Delhi.
- [2] Acharya, S K, Bera, Sneha et. al.(2015) Farm Energy Management in India: The Transforming Economy and Ecology, Krishisanskriti Publication, New Delhi.
- [3] Bandura, A. (1977). Self Efficacy: Toward a unifying theory of behavioural change. *Psychological Review*, 84 , 191-215
- [4] Wood, R.E., & Bandura, A. (1989). Social cognitive theory of organizational management. *Academy of Management Review*,14. 361-384
- [5] Levy, D. (1994). Chaos Theory and Strategy: Theory, Application and Managerial Implications. *Strategic Management Journal*. Vol 15. p 167-178
- [6] Mahajan Girish. (2013-14). Constraints in Diversification of Rural Economy. *American International Journal of Research in Forma, Applied and Natural Resources*. 5(1) pp 54-64
- [7] Duttaroy, Debdutta. (2008). Self-Efficacy of Agricultural Farmers: A Case Study. *Journal of the Indian Academy of Applied Psychology*. July 2009, Vol. 35, No. 2, 323-293.
- [8] Caroline Davies 1997: Director of the Rural Stress Information Network(RSIN) Farmers and Stress
- [9] Dongre D. R. and Deshmukh P. R. 2008: Farmers suicides in the vidarbha region of Maharashtra, India. A qualitative exploration of their causes. *Journal of Injury and violence research*
- [10] Deepali. B. Ghatul (2013). Constraints and stress levels of farmers. *International Journal of Scientific and Research publication*.
- [11] Farouque M. A. and Takeya H. 2008: Resource poor farmer's constraints regarding Integrated soil fertility and nutrients management system. *International journal of agricultural research* vol.3 page (188-195).
- [12] Katherine Falconer 2000: Farm level constraints on Agro environmental scheme participation *journal of rural studies* volpage (379-394).
- [13] Gary Raine 1999: Causes and effects of stress on farmers, a qualitative study. *Health education journal* vol. 58 (3) page (259-270). India 1997.