

Transitions to Alternate Farming: A Dialectic Study from Australia and India

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ABSTRACT

This study examined the reasons for transition to alternative farming in two countries namely, Australia, as an example of the western world practicing modern agriculture and India, as an example of the developing world with a history of practicing indigenous practices. An action research qualitative study was conducted using a convergent interviewing technique, with 20 participants in Australia and 18 participants in India known to have made a transition from conventional agriculture to a range of alternative farming systems. A reflexive process of change undergone by farmers in making transitions from conventional farming to alternative farming was documented by recording the interviews which each lasted from 45 to 90 minutes. The recorded interviews were transcribed and the various reasons to convert to alternate farming are discussed with the interview quotes. The findings indicated that in reality, the Australian participants and the Indian participants have multiple reasons for making the change that exist alongside the commonly accepted reasons of economic, environmental and health factors.

Key words: Transition; Alternate farming:

Industrialized agriculture, previously considered as an innovative approach, was celebrated as the ‘Green Revolution’ in many developing countries (Yapa 1993; Asthana & Kumar 2008) and is now known as conventional or mainstream agriculture. The impact of conventional agriculture is so remarkable in terms of production and productivity levels that many agricultural developmental institutions refuse to recognise the benefits of sustainable agriculture systems (Pretty 1995).

‘Conventional agriculture’ is a method of farm production as illustrated in Figure 1, adopted to maximize the production through removing weeds and pests relying on external inputs. ‘Alternative farming’ describes a holistic approach of recycling nutrients, management of pest and weeds to farm production (Reganold et al. 1987; Marshall 1993). Conventional agriculture is focused on creating the optimum environment for a single target species the ‘crop’, by adjusting the environment so that the growing conditions for the target species are optimized while conditions for competing species like ‘weeds’ and ‘pests’ are

deliberately reduced. This approach to the agro-ecosystem has dominated modern agricultural practice and implies the simplification of ecosystems (Jackson 2002; Jackson et al. 2007). As a result, this approach ignores the symbiotic interactions and resource use complementarities between species (Amani et al. 2007).

A conceptual spectrum of production systems is proposed and illustrated in Figure 1, based on the dependency on the non renewable inputs. In one direction there is the ‘holistic’ approach where there is minimum dependency on non renewable inputs while the other direction there is the ‘reductionist’ approach being highly dependent on non renewable inputs. Therefore, the closer a system is to ‘holistic’ end of the spectrum, the safer it is considered to be for the environment and humans and more sustainable in the long run.

In this paper I investigate the reasons for changing to alternate farming from industrialized farming by interviewing participants representing the developed and developing country. The problems experienced during

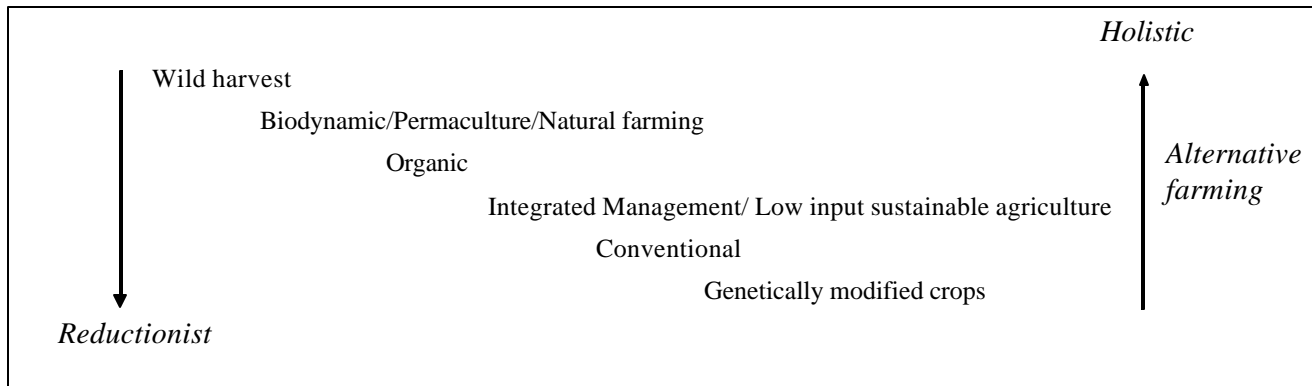


Figure 1. Farming systems and differences in their values

a transition process in a developed country are very different from those in a developing country in terms of scale and process. I address this issue using action research methodology and convergent interviewing technique discussed in detail in the following section.

METHODOLOGY

This is a qualitative study, where the methodology chosen aimed to improve the lives of people through the process of inquiry and also through practical application of the research findings. Action research methodology was chosen for the study in order to address social problems rather than focusing on surveys and statistical methods. Action research’s purpose was to improve social formations by involving participants in a cyclical process of fact finding, planning, exploratory action and evaluation (*Lewin & Lewin 1948*).

Dick (2002) has noted that action research methodology has two aims as follows:

- (i) an action aim (to bring about change in some community or organization or program or intervention) and
- (ii) a research aim (to increase knowledge and understanding on the part of the researcher or the client or both, or some other wider community).

Research quality is addressed in action research agreeing to the views of *Reason & Bradbury (2001)* emphasizing on the qualities such as participation, practical outcomes, plurality of knowing, the significance of the effort, and whether the effort leads to a new and enduring structure, rather than replication of treatments and validation of hypotheses. The research quality was addressed in this study through following a participatory

approach.

The ethical research process as perceived by the traditional researcher has the researcher distanced from their participants and carefully protecting their research but at the same time, gaining the informed consent and assuring participants of the protection of their privacy and confidentiality. *Boser (2006)* argues that the traditional ethical research process does not suit action research, where the researchers and participants share knowledge generation through social relations. In this study as a researcher I address any ethical concerns in the project through building relationships with the participant for knowledge generation for the benefit of the participants and the wider community.

In this study, the information was collected during different phases of the research using different methods. In this study convergent interviewing was undertaken in Australia and India. Convergent interviewing is an in-depth interviewing technique for collecting, analyzing and interpreting qualitative information about people’s experiences, knowledge, opinions, and beliefs that converge on important research issues through the use of a number of interviews (*Dalmau & Dick 1990; Dick 1990; Riege & Nair 2004*). It has been developed and used primarily for organizational change and development interventions. Convergent interviewing is not only a method but also a methodological approach that is highly suitable for exploratory inductive research (*Riege & Nair 2004*). Convergent interviewing also has the advantage of arriving at a common epistemological approach to collecting information with participants from different cultures (*Driedger et al. 2006*).

The first step in this method is planning the interview which included what question to ask, what

information was required and from whom. The broad question to be asked was “*How did you change to the alternate farming system?*” from farmers who were in the process of changing to alternative farming to understand the learnings in the process of transition. The participant’s lists were generated from the websites of certification agencies in both Australia (Biological Farmers Australia) and India (Organic Farmers Association of India website). The key people were also contacted to pool the list of participants. Also through snow ball sampling the list of participants were generated. The question of how many participants to interview was determined by the process itself in accordance with *Dick’s (1990)* views that “the data decides the sample size”. A co-researcher native to the study area was involved during data collection to develop trust, encourage participation of the respondents and also to triangulate the data to avoid bias by the researcher.

The next step was interviewing the participants. The face-to-face interviews were conducted in both the countries in pairs as recommended by *Dick (1990)* by the researcher and the co-researcher. Each interview began with a broad question which was posed to a pair of participants personally. The information given by both the participants was analysed by the researcher and the co-researcher which gave insights on the agreements and disagreements on the issues emerged which was asked to a next pair of participants. This was continued until convergence arrived and disagreements were explained. The interviews were recorded. The audio recording was valuable while interviewing participants as it helped to focus the attention on the participants without losing information as compared to that of taking notes. However the participants’ agreement was obtained before recording the interviews and all the participants were comfortable with recording the conversation. Repeatedly listening to the taped interviews assisted in terms of analysis helping in triangulation of the data. It was also useful to draw out accurate and direct quotes from the interviews. Audio taped interviews were converted to audio files and stored on a computer disc. These audio files were transcribed in English and Tamil (using Tamil Fonts Bamini.ttf) into the sources of the Nvivo program. Soft and hard copies were made for analysis. The interviews lasted from a minimum of 45 minutes to a maximum of

90 minutes. The transcripts averaged from 10 to 20 pages of single spaced 12 point font.

The third step was the analysis of the information. Preliminary analysis was undertaken during the interviewing process and then a detailed content validity analysis was completed after transcribing the recordings. Analysis of the information commenced during transcription of the interviews as it was not mere typing of the audio conversation into text (*Kvale 1996*). Analysis was repeated using Nvivo software. Nvivo software was chosen because it allows the researcher to work in other languages apart from English, such as Tamil (*Jones 2007*).

RESULTS AND DISCUSSION

Expectations and beliefs influence the person who is making the change and as a result of this, the person may continue adopting the change only when they are satisfied or they may discontinue with their actions in the face of disappointments. This ‘*reason for making a change*’ is discussed in detail in this section to conclude if the participants will continue to practice alternate farming. The broad question “*How did you change to the alternate farming system?*” was posed to the farmers making transitions to alternate farming systems such as organic farming, biodynamic farming, permaculture, do nothing farming and less conventional farming. The interviews were conducted in the Queensland region in Australia and Tamil Nadu region in India. The interviews conducted in Australia are discussed as follows.

The word ‘participant’ needed to be repeatedly used and so the acronym API (Australian Participant 1) and IP1 (Indian Participant 1) is used.

AP1, a hobby vegetable grower and was concerned about the land, and the health of producers and consumers. AP2, a commercial herb producer stated that due to their loss of market access, they had experienced a great deal of stress and this had been their reason for change. The quotes from the interviews with both participants are given below.

API: This was a tobacco farm grown conventionally and the land was turned barren with practices like drenching with methyl bromide. I bought this land with the intention of growing organically and selling them locally. The land is now recovering. I am attempting to grow

and maintain quality food with support.

AP2: *General trend of the Australian population was getting away from the traditional potatoes onions and pumpkins and they were going more into the Asian oriental vegetables. The demand for the conventional produce was not there so as we said it was a gradual process. We started with parsley because of the minimum input cost with minimum risk factor and the only cost was just our labour and the risk was not there. It evolved from there.*

AP3, a commercial vegetable grower narrated on changing to an integrated approach for health motives.

AP4, a commercial poultry farmer expressed financial benefits as their motivator.

AP3: *A worker was spraying and the stink, come across and even though there was no drift or anything it was just the stink, and I had the youngest daughter in the farm there with us and, I am thinking well, you know, if that's what it takes to be farmer...there's got to be something better. You know, just a simple little thing like this made me realize. Now we think there's got to be something better*

AP4: *Definitely two angles, one is the pure environmental, the green side but the other was the financial opportunities. There are definitely two sides in it...and the other is we just got too many of our friends in cotton getting cancer and the land is getting ruined and is just not making sense. It wasn't so much the economic thing. I don't think we wanted to be making money from something which made us feel good. We could have made more money out of something that would have been lot easier to do, something we knew, but we wanted to do what we have been doing.*

AP5, a commercial cattle farmer mentioned the expenses involved in using chemicals and stated that in previous times there had been an alternative way to farm without using chemicals. For this reason, they had decided to give up chemicals. AP6, a commercial cattle farmer made changes as he got the feeling through meditation that change was essential. This reason was unique and not mentioned by any other participant.

AP5: *My job was to randomly sample the fruits and veggies for sale, and those samples would then be sent off for chemical residue tests... Some times we found some scary things, so that sort of prompted me a little bit to interest in the health factor in organic production there that I thought was quite interesting.*

Also my father had Parkinson's disease and it started with the chemical link and my dad at one stage was a builder so there was obviously use of DDT. I didn't want to use chemicals and I wanted to be sustainable and there must be an alternative way of doing things in a pretty positive way....

AP 6: *The thought just was a feeling more than anything.... what we are doing is not that beneficial for health and the thought of chemicals but the major driving force was just a feeling that grew over 3, 4 years and then had by coincidence I happened to meet one of the leading organic people around here at that time and they invited me to visits so I went to visit and then decided to do it*

AP7, a commercial vegetable farmer explained that protecting the environment and making a living in a sustainable manner could not be considered as being motivated by financial benefits. AP8, commercial cattle grower used significantly less chemical in their fields and had decided to certify to secure the associated financial benefits.

AP7: *And in a sustainable way we would look out for the environment at the same time do this best to make a living, of this piece of ground*

AP8: *My father started to use some fertilizer, we never used a lot of fertilizer so I farmed virtually chemical free for maybe fifteen years and then I hear of all the people getting premiums for their product being certified organic and I thought well I was virtually organic, I just had to get certified. So I got certified over a three year period and I never got a premium for my product*

AP9, a commercial horticulture crop producer experienced a financial loss and indicated that they could not take any further stress and as a result, had made changes.

AP9: *I thought it was a good idea so I planted 300*

avocado trees with no knowledge at all and I lost 50 trees in the first year and made a mess of it but eventually I learnt. We even did a certificate in sustainable agriculture and learned all about organic farming its very rewarding I enjoy immensely because I can see the results we make money out of it and we now teach farming to other people.

AP10, a commercial cereal producer mentioned health as the reason in the beginning of the interview but during the later part of the interview described their experiences on how biodynamic produce had fixed his child's allergy.

AP10: But we're really not interested in the economic benefits - it is because of allergies with the children and we're really in it for health benefits not for any financial rewards...

...our middle boy was very allergic to what turned out to be a chemical in potatoes....And he couldn't sleep, well he, he'd wake up screaming at two hours after he went to bed. I mean, we wouldn't have got two hours sleep in a row for over a year, till we find out what was wrong. We got on to a biodynamic grower from Armidale, we got his potatoes and you know he just fixed it like that...

As the reason for the agreements on the change to alternate farming were clarified convergence arrived and this theme was not explored with the rest of pairs in Australia.

In India IP1, a commercial coconut farmer had observed the consequences of continuous application of weedicides in their neighbour's field and decided to make a change. IP2, a commercial cocoa producer decided to change for a better income.

IP1: If we see weeds we use weedicides...especially the ones banned in America are sold in India ...These days we do not have enough labour to do weeding and moreover the labour charges are very high ...so we use weedicides...but using them resulted in the death of the micro organisms ...For instance my neighbour harvested 4 crops per year and they were mostly cash crops like turmeric, banana, onion and other vegetables. He used herbicide once for each crop which altogether...was 4 to 5 times per year...and

now the land has reached a state if he sows seed they hardly germinate...the soil has become infertile. On observing this I realized my mistake and decided to make the change....

IP2: The income from the land is not the primary source of income for me....yet I decided to convert to natural farming is because...you never know....Once there is consumer awareness there is chances of getting better income.

IP3, a commercial banana producer bought land to do organic farming for commercial purposes to increase his income and IP4, a commercial horticulture crop producer was managing his land conventionally until he realized that it was not profitable any more and decided to change.

IP3: I wanted to do natural farming so I reduced my investment in other business and bought lands but could not implement as there were lots of difficulties. Then I sold the lands as I did not have a favourable situation to continue. I tried to get better income through commercial organic farming and consultancy and by starting organic farming colleges but could not get it established.

IP4: Actually I was a trader...I was supplying fertilizers, pesticides and weedicides. When my father expired in 1992 being the only son I took the responsibility of taking care of the lands. Till 1996 I was a chemical farmer. When I looked at the accounts of the farm there was heavy shock to me because on that particular year I didn't get the income what I spent over on this land. My income was less than my expenses for this land. Then I realized that what I'm doing is wrong and changed.

IP5, a commercial coconut producer reinforced the statement that the lands were becoming unproductive and IP6, a commercial horticulture crop producer had developed the feeling that there was something wrong in the system.

IP5: Actually as I applied more chemicals and more frequently it yielded well. But I started realizing that this will not continue. When I apply chemicals the leaves will turn green and

very soon will turn yellow just like making quick fix solutions with English medicines. Then the number of nuts (coconuts) started decreasing as the soil has lost all the wealth. But I did not know what to do. The book 'One Straw Revolution' came as a solution for all these problems

IP6: My dad was practicing chemical farming for 40 years. I got the feeling that what we are doing is no good. I fortunately had contacts with other biodynamic farmers and so the feeling got stronger and so I decided to change

IP7, a commercial vegetable producer was not happy with quick fix solutions and believed in siddha and other kinds of medicines for human health. For this reason, he thought natural farming should be the best approach. IP8, a commercial banana farmer was convinced by a group of farmers to convert to biodynamic farming.

IP7: Generally for any health problems I consult a siddha doctor. So I thought why not try natural farming. I also knew a Biodynamic farmer. He is my close friend practicing for 12 years and I liked it very much so started following.

IP8: My friend X is a Biodynamic farmer and he approached me many times to follow Biodynamics. He convinced me by doing it in a portion of my land and this helped me to see the changes by myself and then I started following Biodynamics.

IP9, a commercial horticulture crop producer made claims of being innovative in nature and so moved to biodynamics farming and IP10, a commercial vegetable producer observed the land becoming non responsive to fertilizers.

IP9: I come from a leading farming family. Any new ideas or technology will be implemented first in our farm so I started doing natural farming in 1996 as soon as I came to know about Biodynamics...it took me three years to learn about Biodynamics and there is a long way to go

IP10: I began chemical farming in 1957, I used ammonium sulphate then after. Ten years the yield was not good. Then I started increasing

the quantity of fertilizers and also tried different combination of them available in the market. I observed that it did not increase the yield any more as my soil condition had changed. As the reason for the agreements on the change to alternate farming were clarified convergence arrived this theme was not explored with the rest of pairs in India.

The following conclusions were drawn in regard to this theme. The majority of the Australian participants talked about chemical free food production as a reason to make the change. Some of the participants' family members had experienced health related problems, which were also a reason for making the change. Very few participants were attracted to the niche market. Most of the participants were concerned about their children being exposed to chemicals. A few participants had a holistic outlook of the environment and safe food production for the human population. In India the majority of the participants experienced the land being non responsive to fertilizers and a few participants understood that the microorganisms in the soil were lost due to chemical application which forced them to make a change. Some of the participants were influenced by fellow farmers and several experienced intuition to make the change to the alternate farming system. Through the convergent interviewing process it may be concluded that in reality, participants have multiple reasons for making the change that exist alongside the commonly accepted reasons of economic, environmental and health factors. By interviewing a divergent sample of participants using unbiased questions, these multiple reasons were able to be obtained which may not have been obtained with the use of other methods.

CONCLUSION

Alternate farming is gaining importance in developed and developing countries. Farmers in Australia largely practiced industrialized farming and farmers in India are largely converted from traditional farming practices to industrialized farming. In spite of the differences in culture and biophysical nature of their properties, the results imply that the reason for making the change to alternate farming was common to the farming community in both the countries. Based on the reason to change to alternate farming it may be concluded that farmer participants in both countries

experience various problems in practicing conventional farming which in turn motivates them to switch over to alternate farming methods. The results also emphasizes that a combination of motivations is required for farmers to make a change to alternate farming.

Affirmation statement: The authors hereby affirm that the paper entitled Understanding Why Farmers make Transitions to Alternate Farming: A Dialectic Study from

Australia and India is original based on authors' research findings and has not been published elsewhere.

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