
Comparison of conventional and fair trade systems on dimensions of sustainability: a study of basmati rice procurement in India

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Abstract: Conventional procurement at farm level, as starting point of the supply chain and a crucial link to farmer livelihoods and impact on sustainability, remains specifically ineffective in India. Initiatives like Fair Trade, in domain of ‘alternative trade’ mechanisms, have made inroads in global agricultural trade bridging the ethical consumers of the west to marginalised farmers in developing countries like India. This research paper explores indicators on all the dimensions of sustainability through literature as well as through exploratory factor analysis on primary data collected from Indian farmers who follow either conventional system or Fair Trade system to dispose their produce (basmati rice). The study also compares these systems on all indicators and dimensions of sustainability. It also explores the strength, weaknesses, suggestions to improve and reasons for farmers to remain in the system. Findings suggest that Fair Trade system is better on almost all dimensions of sustainability than conventional system.

Keywords: sustainability; conventional and fair trade systems; procurement; alternative trade.

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1 Introduction

Farm commodities and their trading practices are sensitive issues because of continued plight of farmers in developing countries. The debates on poverty, livelihood and sustainability at farm level because of ineffective procurement are reasonable premises to depict severe weaknesses, and failure in some cases, of existing agricultural trade systems and regimes. Watkins and Fowler (2002) in their report for Oxfam, highlighted that world trade in agriculture has pervaded globalisation, induced deep social injustice and is not sustainable and therefore need to be reformed to mitigate the negative effects. Subsequently, various authors such as Lucas and Jones (2003), Sumner (2005) and Pimbert (2009) have commented on the negative effects of existing trends in food from production to consumption highlighting the overwhelming effect on rural farming communities even to the extent of devastation. The continuing debates and compelling evidence of economic, social and environmental disharmony, over the years, are themselves ample proof of determined fact that the problems are enormously formidable and there is no single universally applicable readymade solution or a perfect alternative towards sustainability or sustainable development.

Simultaneously, on the other hand, there has been interesting evolution in the concept of societal marketing from its earlier impression by Kotler and Levy (1969) about incorporating society's long-term interests in good marketing decisions developments, as it closely links today with the principles of social responsibility and sustainable development. The newer terminology and expressions about societal marketing, social marketing, responsible marketing, ethical marketing, sustainable marketing, corporate citizenship and corporate social responsibility by various authors such as Fuller and Gillett (1999), Fisher and Lovell (2003), CSR Europe (2008), Belz and Peattie (2009), Anderson (2011), invariably show the convergence towards the common grounds of sustainability and practices that are fair and ethical.

To counter the proclaimed negative effects of conventional trade regimes in context of food chains, including exploitive procurement from farmers, various alternatives towards sustainability and trade justice, in the form, name or perception of social movements, sustainability initiatives, market-based schemes, voluntary standards, private labels or third-party certifications have gained awareness and patronage especially in the last decade. The growth of these movements are in principle driven by altruistic, ethical or socially concerned consumers and are based on addressing the issues of sustainability and sustainable development through their respective mechanisms of procurement, responsible supply chains and incentives or benefits on economic, social and environmental fronts. Various authors have expressed the bases of origins of such alternatives as: positive mechanisms that were inherently absent from the conventional trade (Hira and Ferrie, 2006); criticisms against the usual international supply arrangements (Potts, 2007); relevance in context of social injustice emanating from international trade (Decarlo, 2007); need to strengthen agricultural procurement and supply chain to overcome the market failures and provide voice to rural small farmers (World Bank, 2008); birth of ethical sourcing and ethical consumerism with livelihood at grass roots as well as social, economic and environmental tangents of rural sustainability at the core (Witkowski, 2005); changing social and economic climate leading to developing attitude and preference towards ethical and fairly sourced products (Hira and Ferrie, 2006); increasing public concern for the quality, safety, agricultural methods and food production resulting in increasing demand for goods produced according to private standards like Fair Trade (Jaffee and Henson, 2006 as quoted in Giovannucci and Potts, 2008, p.2); and ability to promote sustainable development (Giovannucci and Potts, 2008).

While the hunt for solutions, or more logically, a set of solutions continues, the acceptable reality necessitates evolution, trial and assessment of potentially effective alternatives that can contribute to sustainability at rural grass roots. Fair Trade has evolved itself as one of the flourishing movements towards the premise of 'alternative trade' with its offbeat philosophy of sustainable development through trade and not aid. It has tried to bring in a different thinking and methodology that is claimed to be a saviour of the traditional grass root unfriendly systems of the past. It boasts upon contribution towards aspects of sustainable development and improving farmer livelihoods, especially the marginalised farmers of different commodities in the developing countries, through its specific standards and processes involving price premium, development premium, export market access, capacity building support, audits, certifications and link to ethical consumers.

In context of agriculture production and trade, Indian farmers face a typical paradox. Despite agriculture being the undoubted building block of the country, there are serious questions about sustenance and livelihood of farmers. While the farmers' lives are burdened with debt, despair, distress and doom, issues of social justice and environment at rural grass roots are not considered priority by the concerned. The expressions of ex-prime minister "The challenges that India's agriculture faces in the coming years remain enormous" and "Indeed without providing livelihood security to the farmers, we cannot achieve the goal of inclusive growth" (Singh, 2012, para 7,3), as well as the current Prime Minister's remarks that there are still a lot of challenges in agriculture and the providers of the food should also receive benefits of development (Modi, 2015) stand proof of the situation and indicating need of revamp in exiting systems or at least trials of alternatives. In fact, Government of India's Department of Agriculture and Cooperation's

Annual Report (2011–2012) also indicated towards the need of reforms and suggested incorporation of aspects such as contract farming, role of the private sector in agriculture, organic farming, alternative trade and marketing routes and newer concepts in sustainability.

Traditional Basmati is one typical Indian product that is part of global supply chain with connoisseur consumers in the west. Yet, despite being synonymous with India and despite being a strong export earner, it is marred in the existing procurement and trade regimes that do not focus on sustainability aspects in any specific way. There is lack of procurement policy for basmati (Chaba, 2011), and therefore it makes farmers more dependent and vulnerable to market forces and while the price of crop remains the core issue, address to issues such as vulnerability, environment, social development and sustainability tend to take a back seat. Over the years, the vows at grass roots have continued as indicative in the expression of ‘Basmati Crisis’ recently used by Press Trust of India (2015) in its paper, further adding that the declined prices make farmers allege cartelisation by agents, traders and exporters.

While the historical trade regimes continue with its conventional procurement mechanism dominated by agents in mandis, in the field of basmati as well as in other crops, there have been some initiatives made in context of basmati under the realms of Fair Trade. The claims towards sustainability made by any of the so-called ‘alternative trade’ or sustainable trade mechanisms, however, need to be substantiated through assessment of the difference they have been able to or unable to create at the farm level. This provide a logical study target by way of comparing the performance of Fair Trade and Conventional system in context of basmati based on dimensions of sustainability, namely economic, social, environmental and (more recently suggested) governance.

2 Literature review

The proposition that free market capitalism does indeed have unsatisfactory outcomes, and therefore, alternative trade concepts, sustainable marketing or sustainability initiatives may hold the potential for creating positive outcomes for farmers at rural grass roots drove this literature review.

2.1 Sustainability

The roots of discussion and discourse on sustainable development as an international and important issue lie in the first UN Conference on the Human Environment in 1972 at Stockholm. The issue of sustainability and inherent need towards sustainable development started gaining conceptual prominence through World Conservation Strategy published by the World Conservation Union of IUCN-UNEP-WWF in 1980 (IUCN, 1980). Expectations and views towards sustainability started gaining strength from WCED’s Brundtland Report in 1987 that actually popularised the term ‘sustainable development’ focusing on the premise that the economic need of present times should not compromise the needs fulfilment of future. While the report on the one side mentioned development to give priority to those who live in poverty, and to achieving better equity both within as well as across generations, it also specifically highlighted and stressed that the then current approaches in agriculture, industry and trade did not contribute towards sustainability (WCED, 1987a, 1987b).

The debate on sustainability started because the aspect of ‘development’ as we discuss today, did not exist before the 50s. That period was dominated by colonial regimes that showed no priority towards economic or social advancement in the then colonised and developing world of today (Harris, 2000). Development, even thereafter was seen as a straight line extrapolation related to economic growth in line with the ‘stages of growth’ theory promulgated by Rostow (1960) which envisaged that all nations whether under developed or successfully developing would pass from being traditional society towards maturity and high mass consumption through an economic ‘take off’, and the economic growth perspective to have a surely positive spillover effect on the society.

However, while economic growth happened and economic efficiencies improved in 60s and 70s, the benefits did not trickle down to the most needy or the marginalised strata of the society even in the developed world and it also started becoming evident that there have been major negative impacts of the followed development models on the environment and on existing social structures (Harris, 2000). UNDP’s Human Development Report 1994 also endorsed that the perpetuating development patterns were neither sustainable nor worth sustaining. The aspects of growth, poverty and pollution not only got associated, they also manoeuvred themselves into irreconcilable state of opposition. The international discussion thereafter increasingly began to search for newer models that would incorporate improvements in environment and social wellbeing (Raggamby and Rubik, 2012).

The discussion that followed started evolving the meaning of sustainable development to be made up of three dimensions, namely economic, ecological and socio-cultural. Besides the understandably obvious economic dimension and typical profit issues, the terms and issues of social equity, social welfare, social justice, societal solidarity as well as environmental degradation, environment protection and ecological diversity started getting discussed and debated and it continues in that mode even in present times because meanwhile, development, so far, still has primarily remained inequitable for the people and negative for the planet in terms of environmental impacts. UN’s World Summit on Sustainable Development in the year 2002, expanded on the expressions made in 1987, through The Johannesburg Declaration on sustainability to be ‘a collective responsibility to advance and strengthen the interdependent and mutually reinforcing pillars of sustainable development—economic development, social development and environmental protection—at local, national, regional and global levels’.

2.2 Alternative trade mechanisms

Over the years, the inherent problems in the global food chains with their conventional mechanisms towards procurement at farm level and the growing aspect of unsustainability have got highlighted, discussed and debated by numerous organisations and authors and have been expressed with strong and critical connotations such as deep social injustice (Watkins and Fowler, 2002), massive damage to farming communities and insurmountable barriers to corrections (Lucas and Jones, 2003), overwhelmingly negative effect of globalisation on rural communities (Sumner, 2005), and structural meltdown in the food system and unsustainable food chains (Jones et al., 2011).

Modern consumerism, especially in the west, over the last two decades got induced with the element of concern and ethics in consumption, purchase behaviour and corresponding importance on aspects of sustainability. These concerns have been based on the notion that globalisation with its conventional focus has been unfair for the grass

root rural livelihoods of marginalised farmers; lacking trade justice; harming social fabric and environment; and therefore not ethical and not sustainable in long run; and that while the governments are either confused, incapable, slow or inactive to change the course of action, the corporate, including processors, traders and retailers are equally unwilling to make a change unless they are confronted with newer expressed choices, influential purchase behaviour, demands on newer product values of being responsible, or otherwise 'rejection' by these concerned consumers. Various authors analysed and commented on the growing weight age being given to the purpose of sustainability and the evolving change in the consumer behaviour, expectations, expressions and manifestations highlighted through diverse expressions like increased interest in sustainability by consumers (BCG, 2009); consumer preference for products and brands that demonstrate authentic involvement in supporting communities (Herson, 2010); conscientious consumers forcing market players to address greater social issues and reformulate plans to address sustainability and sustainability expectation affecting retailer image and in turn influencing their supplier association (Lasanti, 2009); consumers translating their ethical concerns by boycotting products that are perceived unfair but willing to pay a price premium on fairer products (Pelsmacker et al., 2005); and sustainability being a unique selling proposition (USP) and new age marketing mantra (Dey, 2010).

While many initiatives of 'alternative trade mechanisms' with their specific procurement processes, supply chains, certifications and support structures have emerged over the past decades with their claims towards sustainability, providing a better deal and improving the lives at grass roots, and though some initiatives have tremendous similarities as well, the acceptance and affiliation towards a particular one depends upon the awareness and individual choice of the ultimate consumer as they remain the driving force behind these newer needs and offers scenario. In general, these initiatives are increasingly backed or formalised through standards, codes or certifications, which correspond to the pillars of sustainability. While the list of standards and certification regimes increase day by day, in context of agricultural and food procurement, most widely known sustainability initiatives are the Fair Trade, Organic, Utz certified and Rainforest Alliance (Giovannucci and Potts, 2008).

2.3 Fair trade

Fair trade has evolved itself as one of the flourishing movements with its offbeat philosophy of 'alternative trade' with the premise of sustainable development through trade and not aid. It has tried to bring in a different thinking and methodology that is claimed to be a saviour of the traditional grass root unfriendly systems of the past. It boasts upon contribution towards aspects of sustainable development and improving livelihoods for the farmers, especially the marginalised farmers in the developing countries, through a better deal. Fridell (2004) elucidated that the emergence of Fair Trade movement lies in demonstration that changing conditions of trade in favour of small and poorer farmers can induce economic and social upliftment. Davies (2007) has captured the evolution of the Fair Trade movement over the years highlighting it to be a benchmark and exemplar of social responsibility in the international market place.

World Fair trade Organization (WFTO) and Fair trade Labelling Organization (FLO) (now called Fair Trade International) as a de-facto pioneers of Fair Trade concept

adopted the Charter of Fair Trade Principles, to provide a single international reference point for Fair Trade by its definition:

“Fair Trade is a trading partnership, based on dialogue, transparency and respect that seek greater equity in international trade. It contributes to sustainable development by offering better trading conditions to, and securing the rights of, marginalised producers and workers, especially in the South. Fair Trade Organisations, backed by consumers, are engaged actively in supporting producers, awareness raising and in campaigning for changes in the rules and practice of conventional international trade.” (WFTO and FLO, 2009, p.6)

It claims to extend distinct benefits for producers like Stable Prices, a premium above the price that helps producers to improve the quality of their live, Market access so that farmers have ease in disposal of their produce and Empowerment so that farmers have better knowledge and capacity towards food safety, farming practices, environmental protection and also to get organised and work collectively (Fairtrade International, 2012a, 2012b).

While claims are promulgated by various initiatives including the Fair Trade, various authors have written favouring as well as criticising Fair Trade. On favouring side, Myhr (2011) indicated that Fair Trade system has increased the welfare of producers of south and their communities supported by altruistic consumers in the north. Nicholls and Opal (2004) described Fair Trade as an innovative supply chain model, which distributes its economic benefits more fairly between all stakeholders, Reynolds et al. (2004) concluded financial benefits, empowerment and capacity building aspect of Fair Trade towards sustainable development. Bacon et al. (2008) suggested that farmers connected to Fair Trade experienced positive impacts in knowledge, infrastructure and savings and Hutchens (2009) pointed that Fair Trade movement has endeavoured to extend market access to the most disadvantaged producers in developing countries on favourable terms. Simultaneously, on the critique side, Hayes (2008) concluded that Fair Trade, indirectly can prolong the dependence on unsustainable modes of production, Booth and Whetstone (2007) claimed that fair trade transactions are more ‘just’ cannot be substantiated, Audebrand and Iacobus (2008) specifically commented that since Fair Trade is a new phenomenon, it needs to be appropriated, and Mohan (2010) concluded that the criticisms of Fair Trade are there but are exaggerated.

Though, the so-called ‘alternative trade’ mechanisms and their standards, processes, compliance parameters, audits and certifications fall in line with the premise, that, in the absence of any big ticket and verified alternatives, remedy to the gigantic problems of sustainability and sustainable development need multiple alternatives to be tried, modified, polished, structured and tested even if they bring in small positive contributions, it remains equally true that the benefits proclaimed by these various voluntary schemes, systems and certifications based on which they claim their suitability and superiority, need to be verified, communicated and perhaps improved upon for bigger effects and acceptance.

2.4 Assessment of sustainability

There are limitations in studying the aspects of sustainability and sustainable development emanating from the fact that there is no consensus on dimensions of sustainability and therefore it is also, in parallel, being debated as to what sustainability entails. While claims about contribution towards sustainability are being made in the

global supply chains, on the other hand, Food and Agriculture Organization (FAO) (2011), through its report on Sustainability Assessment of Food and Agriculture systems (SAFA), cited that there is no international benchmark defining ‘what sustainable production actually entails’, but organisations are increasingly substantiating their sustainability claims on economic, social and environment dimensions by providing increased benefits to farmers and also attracting customers searching for more sustainable, ethical or green products.

For understanding the aspects of sustainability parameters and their selection or development, numerous models like response-inducing sustainability evaluation (RISE) developed by Häni et al. (2003) at Swiss College of Agriculture; Indicateurs de Durabilité des Exploitations Agricoles meaning Farm Sustainability Indicators (IDEA) developed by a French multi-disciplinary team of Zahm et al. (2008); Monitoring Tool for Integrated Farm Sustainability (MOTIFS) developed by Meul et al. (2008); Synthetic Farm Sustainability Index (SFSI) suggested by Majewski (2013) and SAFA endeavoured by FAO (2013) were reviewed. Additionally, the aggregation of sustainability dimensions and indicators suggested by Hayati et al. (2010) and suggestions made under other context-specific studies by Gowda and Jayaramaiah (1998), cited by Hayati et al. (2010, p.76), Alam (2007), Singh (2009), Nirmala and Muthuraman (2009), Gafsi and Faveau (2010), Charyulu and Biswas (2010), Prakash and Singh (2013) and Chengappa et al. (2014) were reviewed (see Table 1).

Table 1 Summary of literature review for sustainability parameters

<i>Year</i>	<i>Author(s)/Organisation</i>	<i>Sustainability parameters</i>
1998	Gowda and Jayaramaiah	Cited crop security, family food sufficiency, input productivity, land productivity, nutrient and water management and therefore had their focus on economic and environment dimensions
2000	Häni et al.	Developed response-inducing sustainability evaluation (RISE) on economic, environment and social parameters
2007	Alam	Suggested focus on yield, price, profit, capacity building, contract support, agri-extension, certification, supply chain integration and traceability
2008	Zahm et al.	Developed IDEA: <i>Indicateurs de Durabilité des Exploitations Agricoles</i> (meaning farm sustainability indicators) based on economic, environment and social parameters
2008	Meul et al.	Suggested MOTIFS: monitoring tool for integrated farm sustainability on the parameters of economic, environment, social and entrepreneurship.
2008	UNEP-UNCTAD	Focused mainly economic dimension through on yield stability and incomes
2009	Singh	Cited Input self-sufficiency, self-reliance, capacity building, product quality, water saving, soil fertility, pest management and integrated supply chain and hence focused on economic, social, environment and system management or governance

Table 1 Summary of literature review for sustainability parameters (continued)

<i>Year</i>	<i>Author(s)/Organisation</i>	<i>Sustainability parameters</i>
2009	Nirmala and Muthuraman	Specifically cited lack of remunerative prices and soil related issues in their study based on Kaithal rice farmers which is also our research area
2010	Charyulu and Biswas	Indicated yield level and variability, costs and prices aspects and therefore had their focus only on economic dimension
2010	Gafsi and Faveau	Suggested economic, social and environment aspects as they cited viability, autonomy, efficiency, quality of life, social involvement, soil fertility, resource management and pollution control
2010	Hayati et al.	Assimilated yield, income, expenses, profitability, social equity and participation, quality of life, education, water resource, use of pesticides and fertilisers, thereby covering the economic, environmental as well as social dimensions
2013	Majewski	Presented synthetic farm sustainability index (SFSl), on the parameters of economic, environment, social, management and quality
2013	FAO	Developed sustainability assessment of food and agriculture (SAFA) on parameters of economic, environment, social and governance
2013	Prakash and Singh	Stressed on cost-return and financial constraints aspects thereby limiting only to economic dimension
2014	Chengappa et al.	Indicated yield level and variability, costs and prices aspects and therefore had their focus only on economic dimension

From above review, it emerged that there is ample relevance and need for sustainability initiatives in whatever forms, but also there is corresponding need to assess the impact at grass roots brought through the procurement and subsequently throughout supply chain in order to substantiate the claims made and thereby establish the possible credibility of any of initiatives. Substantiation of impact at grass roots therefore is an important pursuit towards credibility of the concept on identified sustainable parameters.

In line with the expression of FAO in 2013 that there is still no international benchmark defining sustainable production and there is ‘no universally accepted set of indicators to measure sustainability’ and that the indicators must be adapted to regional or sectoral circumstances and the relevance to the assessed entity; for the purpose of study, from the above reviewed literature, a set of indicators for economic, social, environmental and also newly suggested governance dimensions of sustainability were carefully assimilated in Table 2, taking into account context-specific adaptation and practicality of implementation aspects as indicated by various authors and organisations. The assimilation of parameters and indicators was effected from above reviewed models and context-specific studies and was then corroborated through agri-extension experts and farmers for relevance, practicality and pragmatism.

Table 2 Sustainability parameters and indicators on each parameters

<i>Economic</i>	<i>Social</i>	<i>Environmental</i>	<i>Governance</i>
• Price	• Knowledge (Kno)	• Inputs (Inp)	• Traceability (Tra)
• Yield	• Quality of life (QoL)	• Water (Wat)	• Transparency (Trp)
• Costs	• Food safety (FoS)	• Soil (Soi)	• Support (Sup)
• Vulnerability (Vul)	• Social participation (SoP)		

2.5 Indian basmati rice scenario

Basmati resonates with India and it gets its status and supremacy over other varieties of rice including the fragrant rice varieties from other countries because of its unique size, shape, taste and aroma. Basmati found its way to exports because of the exquisiteness, perceptions and positioning as well as purchasing power of the consumers in developed western markets. While, in export quantity it represents mere 5% of the global rice trade, in terms of value it represents impressive 29% of the global rice trade.

Representing 21% of total agricultural exports and whopping 46% of the total cereal exports from the country in value terms, backed with the fact that 3.7 million Tons (about half of the total production) is exported at prices higher than other varieties (India Export Statistics, 2014–2015), establishes basmati as an important export earner for India on the one side but also as product that carries potential to connect to the elite, conscientious, ethical, concerned, fair, active as well as socially responsible and expressive segment of the consumers in the west, thereby being part of traceable global ethical food supply chains and making a strong contribution towards the much required endeavours towards sustainability at rural grass roots. However, on the contrary the farmers under conventional systems remain vulnerable to lower prices and subject to collusive working of traders (Goyal, 2010; Prashant, 2010) and the age old traditional system have become fundamentally flawed (Sharma and Pillaiyar, 2011) and the above optimistic figures of exports do not correspondingly devolve to stable, increasing or lucrative prices for the farmers. Invariably, when the struggle remains to cover increasing costs and save crops to get as much income, issues of social responsibility and environment effect cannot be expected to be important in farmers' mind. The situation in basmati rice scenario is intriguing because on the one side it reflects a defendable opportunity being there in the global supply chain, yet on other side it is entangled in the old and traditional domestic grain procurement systems that keep the farmers vulnerable to shocks especially in the absence of any price support as in other commodities and thereby causing a resultant negative spill over on society and environment. In parallel, however, Helvatas Swiss Intercooperation (2015) through its project in Thailand and India claimed that rice farmers under Fair Trade and Organic systems can achieve higher yields, lower production costs, higher prices and therefore higher net incomes along with a spillover positive effect on environment through reduced water and natural fertilisers and pesticides usage.

While Basmati has all the potential to carve a unique niche by way of domestic and global demand and ensuring or to make substantial contribution towards the livelihoods at grass roots and also towards social and environmental dimensions of sustainability at farm level, it somehow remains wriggled in the rigmaroles of larger Indian agriculture

scenario and fail to provide that much needed contribution towards sustainability. In context of Indian Basmati and current need scenario of alternative mechanisms, the proclaimed 'sustainability initiatives' and certifications point towards a possible opportunity area for Indian farmers. While on the one side, it can provide greater export market access on potentially fairer grounds of sustainability, not only as a commodity but also as input to value added processed products, on the other side it can also trigger the development of catering eventually to the concerned, ethical, socially responsible and informed consumer segment at domestic front.

In such a scenario, alternative mechanisms like Fair Trade do at least emerge as a beacon towards sustainability which shall be tried, tested and possibly adopted. Though Fair Trade as a concept is still nascent in Indian domestic scenario, it has a presence in context of export of goods such as rice, tea, cashew, spices, cotton and handicrafts. Endeavours in the field of Fair Trade basmati, as an alternative to conventional system, were initiated a few years back in the basmati belt of Haryana. Later, a few more initiatives also were started in states like Uttarakhand. However, there has not been any study at farm level to gauge the benefits experienced by the farmers vis-a-vis the conventional system or its contribution towards sustainability as proclaimed by the Fair Trade regime of standards, certification, audits, supports and management. It can be argued that distressed farmers can be a part of a new concept even if they have nothing to lose, and therefore, a study on conventional and alternative concepts from view point of sustainability from farmers' perspectives holds ample rationale.

2.6 Rationale of study

With problems plaguing the Indian agricultural trade and Basmati being a unique victim, there is reasonable need for alternatives to be implemented. The quest for a viable, sustainable alternative can be based on either searching new alternatives from the world or on assessing any alternative that has been in existence at least for some time even on a small base. The second option obviously allows research to be empirical rather than exploratory. Fair Trade is one such alternative for which there exists a base for research in India. The concept of Fair Trade has made its presence felt, liked and disliked on premise of linking socially concerned consumers of developed world to the small farmers in poorer countries and claiming its sustainability contributions, however, there has not been any study on Indian basmati and therefore provides a strong rationale, relevance and need for study. The purpose of the study is to compare the Conventional and Fair Trade system on the parameters of sustainability at grass roots in procurement under both systems.

3 Methodology

Since the objective of the study is to examine, review and explore the construct to measure and compare conventional procurement system with Fair Trade system on parameters of sustainability a mix of exploratory and descriptive research design is followed. First of all, the study carefully examines the existing literature and models for measuring sustainability through integrative literature review to identify parameters of sustainability for this study. After identifying sustainability parameters as Economic,

Environment, Social and Governance, indicators on each parameter were identified through agri-extension experts and farmers for development of schedule for data collection.

3.1 Data collection

A schedule was prepared to collect the primary data from the formers following conventional or fair trade systems. Price, yield and cost indicators of economic parameter were quite objective and measured in ratio scale while farmer's perceptions on all other indicators were measured on five-point Likert scale (1 as Strongly Disagree to 5 as Strongly Agree). Each indicator was measured by two statements except transparency and support of governance parameter. Since these two indicators have greater role, they were measured through three and four statements, respectively. Schedule also had provision to measure overall satisfaction of farmers with their respective systems, and express strength, weaknesses, suggestions and reasons to continue in same system.

3.2 Sampling design

In India, basmati is grown only in northern states of Haryana, Punjab, Uttarakhand and Jammu and Kashmir. Haryana state has the largest area under basmati cultivation (as per Directorate of Rice Development, n.d.). Kaithal is the area in Haryana where basmati is grown intensively (as per Haryana Online). As a result, the first ever Fair Trade initiative for basmati was started in Kaithal. Since the study involves assessment on Fair Trade Basmati, Kaithal was the obvious choice of geographical area for this study. It is imperative to mention that Fair Trade initiatives are still nascent in India there are very few options available. Kaithal initiative is the oldest one and therefore an assessment based on Kaithal will provide most authentic experience and data about the promises, impact verification and scope of sustainability claims made under the realms of Fair Trade.

For the selection of sample of farmers following Fair Trade system, the sampling frame was registered members (335 farmers) of the Fair Trade basmati farmers' consortium – a registered society based in Kaithal, who are disposing their produce through the procurement under Fair Trade mechanism. On the other hand, for the selection of sample for the Conventional basmati farmers the population was basmati farmers, in the same area of Kaithal, who are using conventional system of disposal of their produce.

Though, in general the farmers using Fair Trade system are quite similar, in terms of area to which they belong, their produce (rice), soil type, land size, resources available, capacity, market, market access, geography and climate etc., still to induce consistency in research, it was necessary to capture the perceptions of farmers who have been growing same variety (traditional) of Basmati for at least 3 years and used similar inputs or cultivation method (organic or not). Out of the 335 farmers in the consortium, 155 farmers conformed to the above conditions of Fair Trade Traditional Basmati practicing organic farming consistently from last more than three years. Out of these 155 farmers, responses from 60 farmers were collected on the basis of their availability and willingness to participate.

This view of the fact that there is no published list of farmers who grow basmati and follow conventional system to dispose their produce. And also there are farmers who

switch crops or switch variety of crop from year to year, however, at village level, farmers know about each other and therefore, to reach conventional farmers in same area, who are also consistently growing same variety of basmati since last at least 3 years, a snowball sampling technique is used to collect the responses from 60 farmers following conventional system.

4 Analysis and discussion

Before performing the factor analysis, correlations among the indicators were examined in Table 3. It is interesting to note that economic indicator, vulnerability is correlated with knowledge and quality of life, indicators of social parameter and transparency of governance parameter, whereas for all other indicators either it has no significant correlation or a very weak significant correlation. Moreover, quality of life indicator has weak or no correlation with indicators of environment parameter and also weak correlation with transparency indicator of governance parameter.

Table 3 Correlation matrix (see online version for colours)

	<i>Vul</i>	<i>Kno</i>	<i>QoL</i>	<i>FoS</i>	<i>SoP</i>	<i>Inp</i>	<i>Wat</i>	<i>Soi</i>	<i>Tra</i>	<i>Trp</i>	<i>Sup</i>
Vulnerability	1.000	0.450**	0.301**	0.184*	0.134	0.191*	0.144	0.116	0.226*	0.294**	0.231*
Knowledge		1.000	0.645**	0.724**	0.783**	0.611**	0.368**	0.709**	0.683**	0.744**	0.827**
Quality of life			1.000	0.262**	0.370**	0.109	0.114	0.208*	0.274**	0.224*	0.380**
Food safety				1.000	0.773**	0.670**	0.448**	0.788**	0.680**	0.803**	0.844**
Social participation					1.000	0.676**	0.373**	0.791**	0.863**	0.769**	0.868**
Inputs						1.000	0.702**	0.864**	0.675**	0.828**	0.740**
Water							1.000	0.583**	0.376**	0.494**	0.346**
Soil								1.000	0.752**	0.886**	0.851**
Traceability									1.000	0.725**	0.772**
Transparency										1.000	0.841**
Support											1.000

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

KMO and Bartlett's test (refer Table 4) were also conducted to check the suitability of data for structure detection. A 0.723 value of Kaiser Meyer Olkin (KMO) measure, which is >0.60 and significant Bartlett's test of sphericity suggest that data are very much suitable for structure detection.

Table 4 KMO and Bartlett's test

Kaiser-Meyer-Olkin measure of sampling adequacy		0.723
Bartlett's test of sphericity	Approx. Chi-Square	3844.991
	Df	300
	Sig.	0.000

To check the stability of scores Cronbach alpha was calculated. A value of 0.958 (refer Table 5) confirms a good internal consistency and reliability.

Five components emerged from principal component analysis as shown in Table 6. The rotated component matrix with Varimax and Kaiser Normalisation method produced five components with eigenvalues >1. Together, they account for 79.35% of the variability in the original variables. This suggests that five latent influences are associated with sustainability.

Table 5 Reliability statistic

<i>Cronbach's Alpha</i>	<i>Cronbach's Alpha based on standardised items</i>	<i>No. of items</i>
0.961	0.958	25

Table 6 Rotated component matrix^a (see online version for colours)

	<i>Component</i>				
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
S9	0.210	-0.044	-0.061	0.113	0.830
S10	-0.149	0.360	0.062	0.213	0.767
S11	0.472	0.237	0.099	0.613	0.152
S12	0.365	0.523	0.262	0.428	0.285
S13	0.163	-0.122	-0.004	0.796	0.252
S14	0.068	0.177	0.045	0.843	0.013
S15	0.423	0.678	0.111	0.137	-0.068
S16	0.408	0.490	0.460	0.305	0.002
S17	0.807	0.361	0.180	0.293	-0.011
S18	0.706	0.470	0.213	0.270	-0.024
S19	0.311	0.596	0.420	0.086	0.223
S20	0.366	0.438	0.701	-0.056	-0.085
S21	0.116	-0.083	0.775	0.133	0.371
S22	0.119	0.245	0.861	-0.037	-0.151
S23	0.437	0.368	0.622	0.247	-0.168
S24	0.514	0.696	0.269	-0.025	0.079
S25	0.887	0.221	0.175	0.093	0.122
S26	0.816	0.302	0.275	0.097	0.133
S27	0.114	0.799	0.137	-0.049	0.303
S28	0.446	0.585	0.394	0.042	0.309
S29	0.583	0.611	0.408	0.182	-0.065
S30	0.490	0.557	0.242	0.449	-0.070
S31	0.458	0.723	0.118	0.184	-0.146
S32	0.575	0.650	0.046	0.314	0.098
S33	0.634	0.459	0.287	0.275	0.153

Extraction method: Principal component analysis.

Rotation method: Varimax with Kaiser normalisation.

^aRotation converged in 18 iterations.

The schedule which generated this data was having statements on different indicators (refer Table 2) of four sustainability dimensions, whereas this factor analysis was done to examine if there exist any other structure. These statements grouped under five different factors by factor analysis provide a little different perspective. Statement 9 and 10 (S9 and S10) were originally on economic dimension and this factor analysis also recognise them together as fifth factor. Originally social dimension kept four indicators, whereas the factor analysis find only 'knowledge' (S11 and S12) and 'quality of life' (S13 and S14) together in fourth factor with a small correction on statement (S12), this statement quite logically gets its presence in governance as well as social dimension. Because confidence on better future is not necessarily because of the current system but also on the governance issues of the current system. In the third factor statements of environment dimension gets clubbed together with exception on statements (S19 and S24). Statement 19, which is about 'increase in usage of fertiliser' in the current system is not just an environmental issue but is also viewed as issue of governance. Similarly, statement 24, which refers to land's fertility for future generation is logically more viewed as governance and social issue than environmental concern. Second factor in this factor analysis is mainly dominated by statements of indicators of governance and statements of indicator 'Food Safety' (which was originally under social dimension) except statements of traceability indicator and statement 33, which is about improving market connectivity and access. Technically this factor also includes statement 12, 19 and 24. Interestingly, the first factor of this analysis includes the statements of Social Participation indicator of social dimension and Traceability indicator of governance dimension and statement 33 of market connectivity and access.

This factor analysis suggests that we need to review the indicators of social dimension as it gets divided into two parts. One intrinsic factor which combines knowledge and quality of life indicators, whereas one extrinsic factor which includes social participation indicator of this dimension and traceability indicator of governance dimension and statement of market connectivity and access. Moreover, food safety indicator of social dimension along with statements on, more confidence on better future, increased usage of fertiliser, and land's fertility for future generation are being viewed as issue of governance.

Primary data obtained through schedule from both types of farmers on dimensions of sustainability and their indicators discussed above was analysed and compared through descriptive statistics in Tables 7 and 8.

It is interesting to note that farmers associated with fair trade system show higher average value on all indicators of sustainability representing the four sustainability dimensions. The *P*-value clearly shows that there is a significant difference between the average values of all indicators except vulnerability. On issue of vulnerability farmers perceive that both the systems are almost equally vulnerable.

Since vulnerability is the only perception-based measure on economic dimension, both the systems do not have significant difference. Whereas all other three dimensions, i.e., social, environment and governance, fair trade system is way ahead and significantly different of conventional system.

On overall satisfaction, farmers following conventional system score an average of 1.75 with a standard deviation of 0.77, whereas the fair trade farmers score an average of 3.75 with a standard deviation of 0.58. The difference is huge and significant.

Based on these values, it can be said that farmers with fair trade are much more satisfied when compared with farmers with conventional system, although the perception of vulnerability still exists in them.

Farmers following both conventional as well as fair trade system were asked to share their opinion about strength and weaknesses of their respective systems. Their responses are summarised in Table 9.

Table 7 Descriptive statistics of sustainability indicators

<i>Sustainability indicators</i>	<i>Traditional</i>		<i>Fair trade</i>		<i>p-value</i>	<i>Overall</i>	
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>		<i>Mean</i>	<i>SD</i>
Vulnerability	2.63	0.72	2.91	0.76	0.29	2.77	0.74
Knowledge	2.41	0.55	3.84	0.54	0.00	3.13	0.91
Quality of life	2.53	0.69	3.09	0.64	0.02	2.81	0.72
Food safety	2.88	0.59	4.41	0.33	0.00	3.64	0.91
Social participation	1.94	0.54	4.44	0.48	0.00	3.19	1.37
Inputs	2.38	0.59	3.91	0.82	0.00	3.14	1.05
Water	3.06	0.79	3.78	0.75	0.01	3.42	0.84
Soil	2.25	0.55	4.25	0.52	0.00	3.25	1.14
Traceability	1.50	0.68	3.88	0.56	0.00	2.69	1.35
Transparency	2.23	0.73	4.15	0.49	0.00	3.19	1.15
Support	1.94	0.43	4.08	0.51	0.00	3.01	1.18

Table 8 Descriptive statistics of sustainability dimension

<i>Sustainability dimensions</i>	<i>Traditional</i>		<i>Fair trade</i>		<i>p-value</i>	<i>Overall</i>	
	<i>Mean</i>	<i>S.D.</i>	<i>Mean</i>	<i>S.D.</i>		<i>Mean</i>	<i>S.D.</i>
Economic	2.63	0.72	2.91	0.76	0.29	2.77	0.74
Social	2.44	0.3	3.95	0.36	0.00	3.19	0.83
Environment	2.56	0.55	3.98	0.61	0.00	3.27	0.92
Governance	1.89	0.31	4.03	0.33	0.00	2.96	1.13

Table 9 clearly shows that a farmer following Fair Trade system gets more advantages when compared with farmers following conventional system with major concern of price fluctuation, increasing cost certification fee and procedure and compliance. Farmers following conventional system also face concern of price fluctuation and increasing cost but also face challenges on exploitative Mandi and no trust, inconsistent/decreasing harvest, reducing soil fertility, no heap and support, etc.

Farmers were also asked to give suggestion for improvement in their respective systems, and the responses were as shown in Table 10.

Farmers following both the system look forward for increase in price, whereas farmers following conventional system expect more support, better system to address their needs, formal grouping and better pesticides. Farmers following fair trade suggest for reduction in certification fee and ease in procedure with decrease in input cost.

On the issue of reasons for remaining in their respective systems, their responses (see Table 11) reveal that the farmers following conventional system find lack of alternative and difficulty to change with no resources or lack of information.

Table 9 Strength and weaknesses

<i>Sustainability dimensions</i>	<i>Conventional</i>		<i>Fair trade</i>	
	<i>Strength</i>	<i>% Response</i>	<i>Strength</i>	<i>% Response</i>
Economic	Reasonable income	25	Harvest consistency and quality	75
			Income stability	63
			Comparatively better price	56
			Quick payment	25
Social			Hope and confidence of better future	69
			Group solidarity and social contribution	63
			Safer products for society	63
Environment			Natural inputs/no poisons	94
			Soil fertility maintained	63
			Less water usage	25
Governance			More trust in system	81
			Financial support	75
			Training and certification	69
			Less dependence on Mandi agent	63
Economic	Price fluctuation	75	Price fluctuation	44
			Inconsistent/ decreasing harvest	63
			Increasing costs	44
Social	Reducing social standing	31		
Environment	Reducing soil fertility	56		
			More quantity of chemical pesticides and fertilisers required	38
Governance	Exploitive Mandi and no trust	75	Certification fee	63
			No help and support	44
			Procedures and compliance	56

Table 10 Suggestions

<i>Sustainability dimensions</i>	<i>Conventional</i>		<i>Fair trade</i>	
	<i>Suggestion</i>	<i>% Response</i>	<i>Suggestion</i>	<i>% Response</i>
Economic	Increase price	63	Increase price	50
			Decrease input costs	31
Social	Farmer grouping	50		
Environment	Better pesticides	38		
Governance	More support	75	Reduce certification fee	75
	Better system addressing Farmers needs	69	Make it easy for farmers	63

Table 11 Reasons to remain in system

<i>Sustainability dimensions</i>	<i>Conventional</i>		<i>Fair trade</i>	
	<i>Suggestion</i>	<i>% Response</i>	<i>Suggestion</i>	<i>% Response</i>
Economic			Comparative income stability	75
			Harvest stability	69
			Better price and payment system	50
Social			Hope for better future	69
			Group structure and help	63
			Social contribution	38
Environment			Soil fertility	75
Governance	No alternative	81	Trust in system	75
	Difficult to change	75	Quality and certification	56
	No resources or information	31		

5 Conclusions

Researchers have agreed that continued plight of our farmers can be addressed only if it is dealt on dimensions of sustainability such as economic, environment, social and governance. But the problem is that every system, be it conventional or Fair Trade claims that they address the issues of farmers better than others. The concept of Fair Trade has made its presence felt, on premise of linking socially concerned consumers of developed world to the small farmers in developing countries like India and claiming its contribution on dimensions of sustainability.

In this research paper, we have tried to identify the indicators under each dimensions of sustainability through literature and developed a schedule to collect the data from the farmers following both conventional as well as alternative Fair Trade system to dispose their produce (basmati rice). Exploratory factor analysis in this study suggests that indicators of social and governance parameters of sustainability are not as per literature. Indicators in these two parameters are splitting and getting clubbed together, pointing for

a different view in developing country like India. These clubbing of indicators in social parameter can be viewed with intrinsic as well as extrinsic flavours. Perception about knowledge and quality of life is about self (intrinsic), whereas social participation, traceability, and market access are with others (extrinsic). These results can be viewed as indicative and needs to be explored further on a larger sample size in other settings for confirmation.

A descriptive analysis of data shows that the farmers with Fair Trade systems score significantly higher when compared with farmers following conventional system on all indicators of sustainability dimensions except vulnerability. On vulnerability though Fair Trade system scores more than conventional system but their difference is not significant.

Farmers with Fair Trade system find relatively more strength and fewer weaknesses in the system when compared with their fellow formers who follow conventional system. But all formers irrespective of their affiliation to the any system expect for increase in the price. Following the insights presented above, it can be inferred that Fair Trade in its current form at least holds a promise as a potential alternative that can induce better sustainability at rural grass roots. Through further investigation, and an improvised form of Fair Trade system can be introduced for sustainable procurement of basmati rice in India.

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