



## Consumer's Perception and Sellers's Attribute on Organic Food Production in Batticaloa District, Sri Lanka

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### Abstract

*Over the past decades, demand on organic food products has been increased rapidly in all over the world. Therefore, people show an interest on cultivation of organic products at their home level as well as purchasing organic food products by selective buying in markets and supermarkets. In this view, a pre tested questionnaire survey was conducted to understand the nature of sellers supported with their monthly income, profit and economic status for their successful living standard as much as focusing on organic food products. Further, prevalence was analyzed statistically with the access of SPSS (version 22) and significant level was considered at  $P < 0.05$  and  $P < 0.01$  level. Farmers (organic food producers) were randomly selected from three Divisional Secretariat Divisions named as Koralaipattu North, Eravur Town and Manmunai North included with ten GN Divisions in Batticaloa District, Sri Lanka. There was a positive significant relationship on monthly average income of the sellers with the extent of land ( $P < 0.05$ ,  $r = 0.482$ ), price determination ( $P < 0.01$ ,  $r = 0.818$ ), selling the entire commodity ( $P < 0.01$ ,  $r = 0.715$ ) and economic status ( $P < 0.05$ ,  $r = 0.380$ ). Transportation was satisfaction with more than half of the sellers. Satisfaction showed the negative impact on the damage of the commodity ( $P < 0.01$ ,  $r = 0.787$ ). However, if there is any damages over a commodity, it showed a great reduction on their selling of goods ( $P < 0.05$ ,  $r = 0.454$ ) which was occurred due to the public transportation and poor road facility ( $P < 0.05$ ,  $r = 0.407$ ). Extension services played a vital role in income growth of the top level farmers (high knowledge) with  $r = 0.449$  at  $P < 0.05$  level. Available extension services negatively influenced with practical way of technical supports on poor level of farmers due to the lack of basic knowledge and awareness of the sellers. It was  $r = 0.523$  at  $P < 0.01$  level. As the result, consumers' perception was identified as the key factor contributing much on sellers' attributes for adapting new technologies on organic farming in each part of the DS Divisions from Batticaloa District. Positively signified correlations were clearly seen with the increased living standard and economic status of the sellers in Batticaloa District, Sri Lanka where it needs to be enhanced in future and via further studies.*

**Keywords:** Consumers' perception, demand, economic status, extension, price determination, organic products.

### Introduction

Pattern of food and its ways of consumption have been changed a lot due to the health and environmental issues, in all over the world. Therefore, people concentrated much on their health benefits for long living and for that attempt to adapt organic food as their main meal rather than depending on inorganic products which are tremendously available in all the markets and super markets our country. Environmentally Identified Products (EIPs) refers to food products that are described as organic or sustainable, or were grown using Integrated Pest Management (IPM), or in other respects are viewed as having a relatively less negative impact on the environment than directly competing products<sup>1</sup>. Organically produced food is generally regarded as healthier, safer, better tasting and more nutritious than conventionally produced food<sup>2</sup>. And also the development trend of Organic Agriculture in world during the past decade shows a positive growth. As an example USA and Canada are having rapidly growing Organic Food market of 20% and Europe is having 7.8% per year<sup>3</sup>.

In Sri Lanka, organic agriculture is one of the sustainable agriculture approaches that are being promoted and practiced extensively in each province. Land availability for Agriculture is 3.75 million hectare and labor force participation is around 33% to Agriculture<sup>4</sup>. However, the organic food cultivation has been done at home garden level and not much in large extent while comparing with paddy cultivation and inorganic cultivation of vegetables and fruits. Even though, the contribution of Agriculture to the national GDP is 12%, the contribution of organic farming remains lesser than 1%. Because of the increasing population and low food availability, farmers adapt inorganic food production for the higher proliferation food supply. It was the trend in Sri Lanka, for past two decades. Further, statistical reports in relation to chemical, pesticides, herbicides and fungicides usage showed definite values which were much more than the usage of previous years<sup>4</sup>. Hence, private and international organizations invest more on developing public certification programs in order to promote the organic food productions.

In spite of these, the relatively higher prices of organic food, together with lack of availability, lack of awareness of the organic concept and uncertainty over the truthfulness of organic food claims are hindering more widespread consumption<sup>5</sup>. While some studies suggest that the motivation to purchase organic and local products derives from environmental concerns, other production and quality concerns (nutrition, support for family or small farms, and treatment of animals) are increasingly reported as issues guiding consumer choices. In this circumstance, this study was aimed to categorize the fundamental factors which affect the demand of organic products such as income, price, nutritional value, quality of the organic food and differences in tastes and preferences of the customers. And also the prevalence and distribution of organic food production was analyzed in Batticaloa District, Sri Lanka.

**Objectives of the study:** To analyze the consumers' perception on sellers' attribute towards the organic food production in Batticaloa District, Sri Lanka. To find out the major factors involving in determining the sellers' economic status in addition to the consumer preference and attitude for selecting and buying organic products in Batticaloa District, Sri Lanka.

## Material and Methods

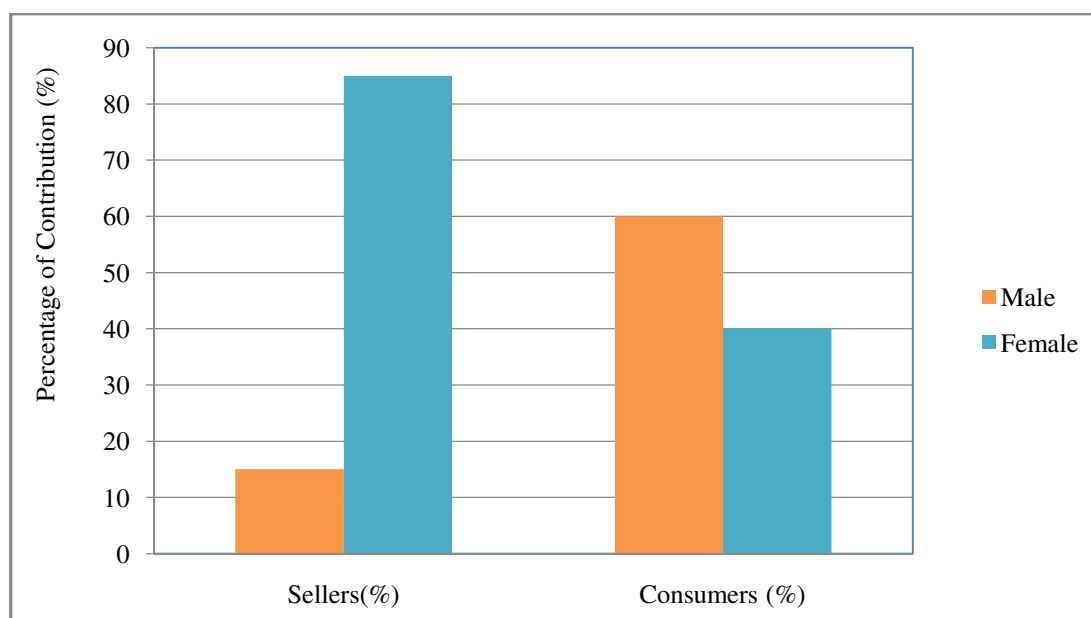
Two questionnaire surveys were conducted separately for consumers and sellers who involved much in organic food production and consumption in 10 GN divisions viz Kathiraweli, Uriyankattu, Puthur, Kadukamunai, Navtkudah, Marapalam, Urukamam, Thiruperunthurai, Eravur and Putchankerny at 3 DS divisions (Koralai Pattu North, Eravur Town and Manmunai North) in Batticaloa District.

Household data and Marketing of organic food product were the main theme in sellers' questionnaire survey and were subdivided into further and deeper for correlation analysis. In addition, consumer's survey consisted socio-economic details and consumers view as well. Sellers were identified from their farming activities and their home garden based on organic farming and also the consumers were recognized through which their continuous purchasing of organic foods at these specific places. Not only that, but pre structured questionnaire was clearly elaborated and discussed with farmers too. Finally, data were spreaded in MS Excel and SPSS (Version 22) for the correlation to identify the influencing factors in organic food production and its far distribution in Batticaloa District, Sri Lanka.

## Results and Discussion

**Engagement of Sellers in organic farming:** Analyzed questionnaire survey comprised with 60% of male and 40% female as consumers and also, 15% and 85% of sellers side of male and female, respectively (figure-1).

It shows mainly female takes much interest on selling of organic farming in markets rather than male farmers. However, decision making capacity on organic food consumption was equal in both gender basis<sup>6</sup>. Mainly, educational background of the sellers in those DS Division, were very low. Only male had the responsibility to move far for working and earning income. As the supportive way, now female's contribution is begun towards their home garden and derives few earning from organic farming. While selling those marketable products in such backward areas, male took much responsible to find those places and consumed.



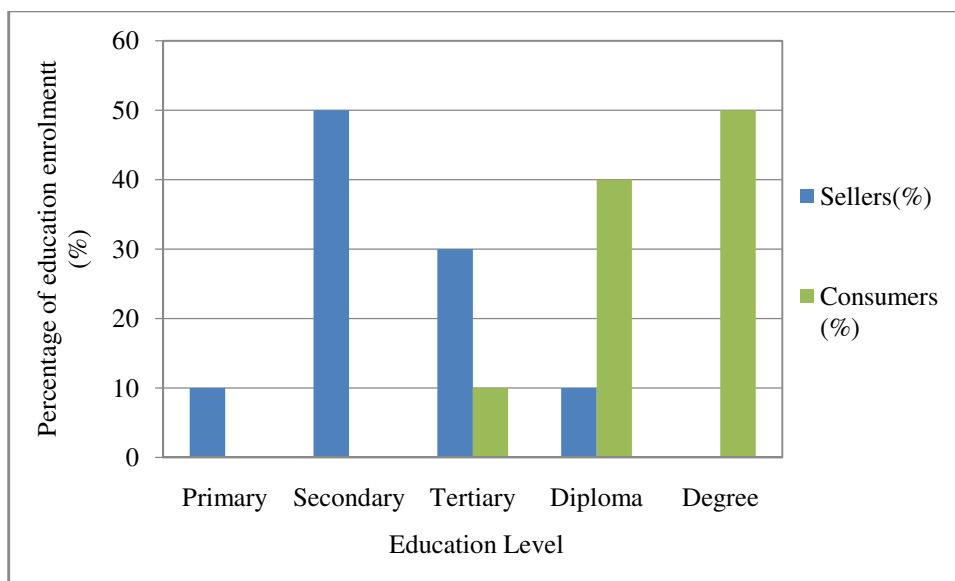
**Figure-1**  
**Percentage of gender contribution in organic farming**

During the study period, age of the sellers who contributed as respondent varied between 20 and 60 years and also more than half of them attended secondary level education. However, more than half of the consumers had the Degree level education enrolment on buying organic food products in those selling area.

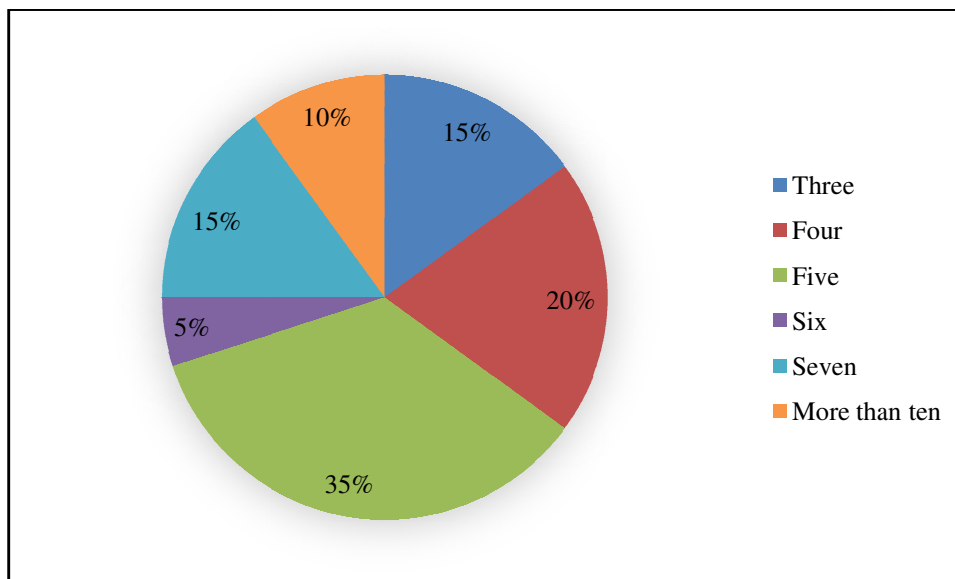
**Educational qualification of sellers and consumers:** Figure 2 shows the difference between education level of the sellers and consumers. The aforementioned organic food attributes (through such knowledge), along with increasing interest in health and quality of life, environmental preservation, and food safety, have stimulated families to choose a wide range of organic food

products<sup>7</sup>.

While the education level increasing, people had much awareness on organic food consumption with much literature sites and knowledge. In a recent article<sup>8</sup> found that about 90% of people gained knowledge through interviews and recordings that organic foods are healthy and good for the environment. Producers who engaged in organic farming did not gain knowledge from their education vice versa they gained knowledge from their experience. Hence, study location showed the sellers' experience between 10 and 25 years.



**Figure-2**  
Education enrolments of the respondents and sellers



**Figure-3**  
Involvement of family members

**Engagement in farming activity:** More than half of the farmers (80%) engaged in farming activity as full time employment and around 20% of the farmers involved in organic cultivation as part time employee. Those who were engaged in full time cultivation mainly follow crop and animal integrated farming system and also part time followers mainly linked with government and NGO's opportunities.

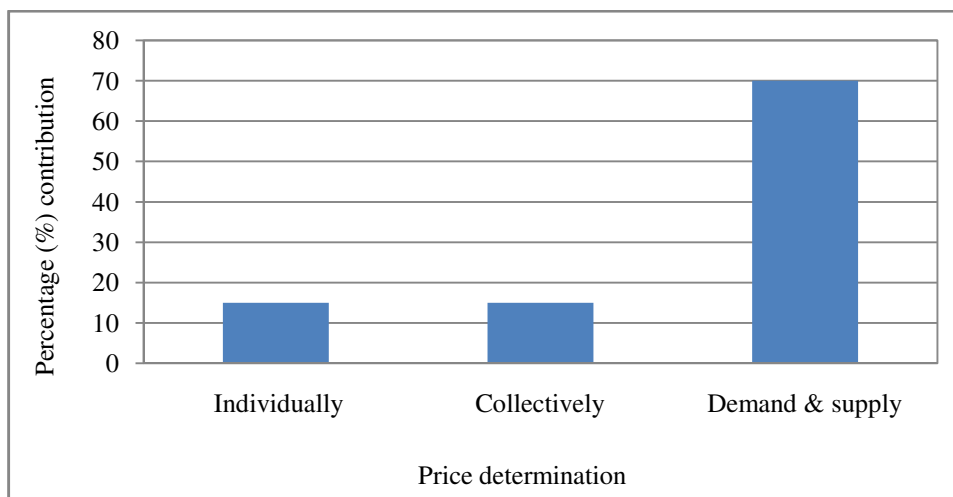
Integrated farming system was the one reason for their success in organic food cultivation rather than mono cultivation in crops and vegetables in Batticaloa District. It is also found that, family members are involved in most of the organic farming activity.

**Organic food production and marketing:** Mean farming experience of the seller was 10 to 25 years and also their average monthly income via organic produce was recognized with Rs. 5,000 to 10,000. There was a moderate positive relationship was observed between extent of organic food cultivation and monthly income. It was  $r=0.482$  at  $P<0.05$  level ( $R^2=0.23$ ). Brinjal (40%), Okra (8%), Tomato (7%), Chilli (40%), Leafy vegetables (3%) and Gourds (2%) were cultivated as main organic vegetable crops and which were taken to the selling sites, located in urban areas of Baticaloa region. In addition, Banana (55%), pine apple (6%), water melon (5%), mango (23%), papaw (8%) and orange (3%) were the main organic fruits sold at the marketing sites. Although, the different types of products were belong to this marketing, sellers faced difficulties in their available inputs especially natural compost, cow dung etc. Nearly, 75% of the sellers were with the satisfaction of inputs and 25% of the sellers do not. It might be the one reason that they are lack in knowledge on compost making and waste management technique. There was a strong  $r=0.642$  ( $R^2=0.41$ ) significant positive relationship at  $P<0.01$  level, obtained between available extension services and promoting way of available inputs. Further, extension services supported with product transport with suitable packaging and preservation techniques from one place to another (moderate

and positive relationship  $r=0.404$  at  $P<0.05$  level). There was a strong negative relationship observed between satisfaction of transport and damage of the organic food during transportation. It was significantly derived with  $r=0.787$  at  $P<0.05$  level.

**Price determination for organic food products:** While considering price determination, it was mainly announced among the sellers with the help of demand and availability of organic foods at their selling places. Sellers, if they bring their goods to markets then the price were determined collectively by whole contributors in their farming society and also the demand of good at that time. Therefore, the demand of good highly involved in determining price of those commodity. In this analysis, while land extent increases, the output of the commodity to the market also increases. Finally, the person will be the chief one to determine the market price as long as their monthly income also increases. Hence, the relationship between extent of cultivation and price determination was positively correlated ( $r=0.394$  at  $P<0.05$  level) as well as those determined price will be positive to that particular's monthly income level ( $r=0.489$  at  $P<0.05$  level) which were weak and moderate in its relationship, respectively.

In addition, the location of the market also used to be a reason for price determination. While the market location is in urban area, it may be the one cause to determine the price. According to that, when the market location moves from village to urban, the determined price also increased positively and significantly as  $r=0.498$ ,  $P<0.05$  level even the organic food products were available in supermarkets too. However, price deviated from buying organic goods from supermarkets located in urban area as well as location of local markets. People also preferred to buy organic products from local markets when it is located in urban sites. Concerns about global climate change may also have been an important factor in consumers' decisions to purchase locally<sup>9</sup>.



**Figure-4**  
**Price determination of organic food**

**Labeling of organic food products:** Present study depicted that many sellers (80%) do not adapt labeling for their products in market. This was the drawback in selling many foods due to the lack of trustiness of consumers. However, people believe and have the knowledge to identify the right organic food produce through the appearance of organic food to inorganic food. On the other hand, if the product is produced much and transported far, then there would be possibilities of labeling for the consumer willingness (figure-5). Around, entire respondent agreed with labeling in future (100%).

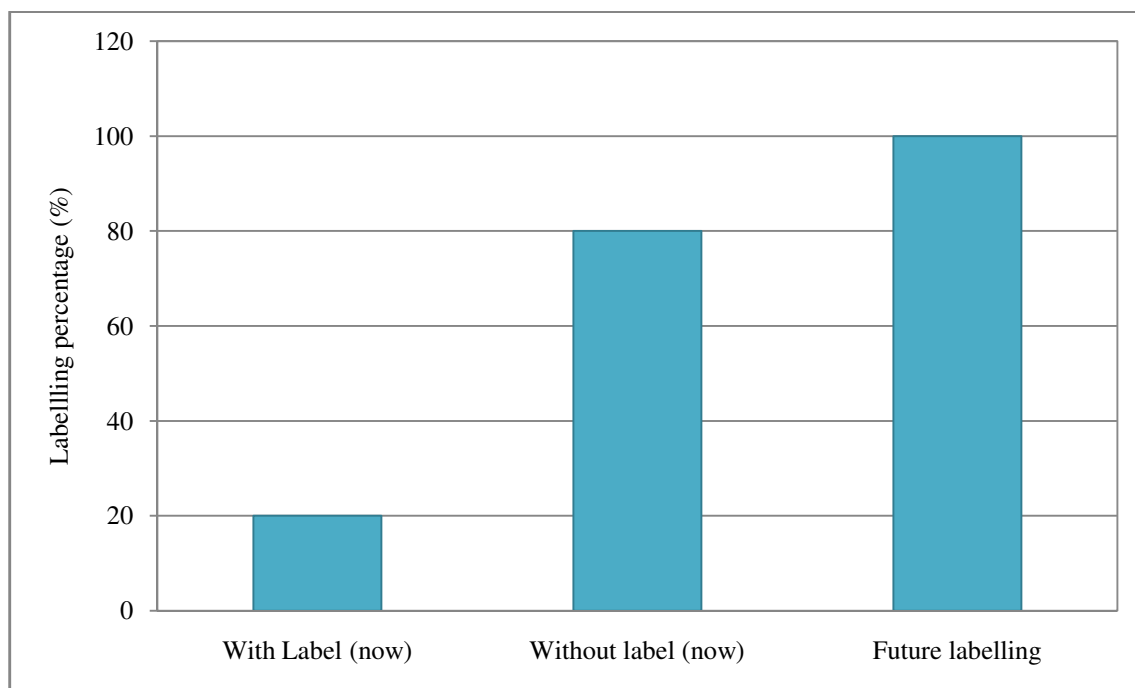
**Price expectation, expenditure and income of sellers:** Sellers who engaged in the organic food production and selling had very low extent of cultivation (1- 3 acre) for vegetables and fruits in organic way. They had fixed their own price before bringing it to the market and also had some expenditure on buying cow dung, compost, land preparation activities, weeding etc. Those two ultimately influenced on sellers' income in their public marketing.

Present studies showed such relationship between extend of land and expenditure as well price expectations and family income. A strong positive significant relationship was obtained ( $r=0.818$ ,  $R^2=0.67$ ) at  $P<0.01$  level between price expectations and monthly income. And also, relationship was moderate as  $r=0.473$  at  $P<0.05$  level between the extent of cultivation and expenditure of commodity.

Relationship between optimum income and selling all the good was identified with  $r=0.715$  at  $P<0.01$  level ( $R^2=0.61$ ). It was

true while selling all the goods; it would be the output of higher income. When the determined price was reasonable, all the vegetables and fruits were sold successfully and the relationship was observed as  $r=0.498$  at  $P<0.05$  level. Further, economic status of the farmers was partially contributed with the damage of organic products during its transportation and services in this study period in Batticaloa District. If the damage is higher, it would be highly influenced with economic status of the sellers ( $r=0.572$  at  $P<0.01$  level). In addition, road damages and public transport services of fruits and vegetables were the one reason for the tight impact on economic status of the sellers as well as Batticaloa District on Organic food and distribution. A significant positive correlation was achieved at  $P<0.05$  with  $r=0.513$  relationship between economic status and clear transportation.

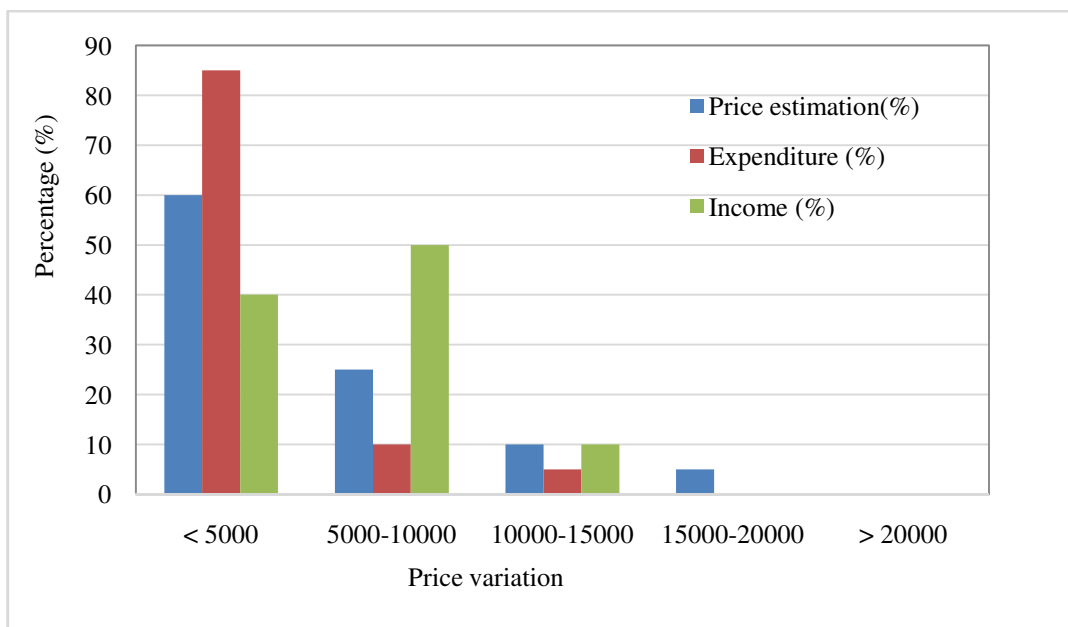
At last, sellers much needed with technical supports on accounting, food safety, business planning, packaging and labeling and data management. However, present study differentiated both extension services and practical way of technical supports. While providing extension services, farmers who are at the top level in their concepts regarding organic farmers got much benefits ( $P<0.05$ ,  $r=+0.449$ ) rather than low level sellers. Hence, if the extension services done with practical way of technical supports, then it would cause some remarkable achievements in their selling approach and full filling consumer's demand and supply. A significant negative relationship was obtained between extension services with lack of technical supports. It was  $r=0.523$  at  $P<0.01$  level.



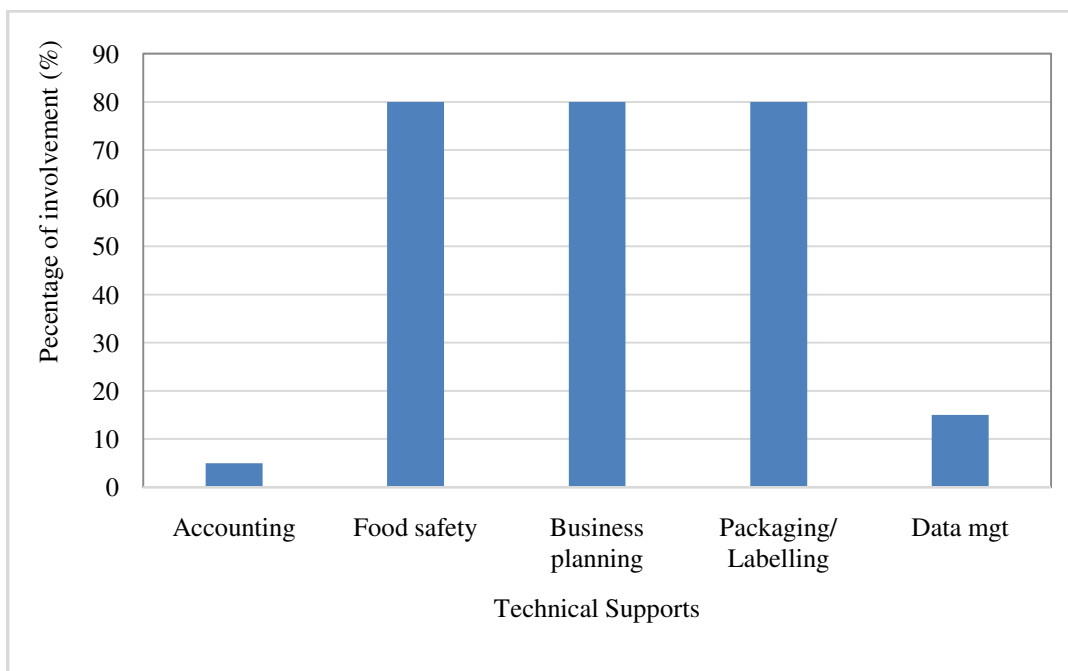
**Figure-5**  
Attitude towards labeling on organic foods

**Technical support for organic farming:** In this study, sellers need to be technically supported with food safety measures (80%), business planning (80%) and packaging and labeling (80%). Previous research indicates that consumers purchase organic products out of the belief that they are healthier for the environment, nutritious, better tasting, or some combination of the three factors<sup>10</sup> compared with conventional products. They need such marketing strategies and publicity on behalf of their

organic products to reach such exposures. It showed the positive significant relationship as  $r=0.597$  at  $P<0.597$  level with such technical supports. It is reported<sup>3</sup> that the health, taste and environmental safeguard are the main inherent reasons for purchasing organic food. The same factors were individuated by Gil J.M. et. al.<sup>11</sup> among the factors that principally switch consumers towards organic products.



**Figure-6**  
**Price expectation, expenditure and income of sellers**



**Figure-7**  
**Technical supports for further achievements**

And also, when considering technical issues, sellers no need to take much attention on their land availability. With the limited resources, farmers and sellers can gain a high profit. It was evidenced from this current research and the relationship was negative between the concept regarding land availability (resources) and technical supports at  $P < 0.01$  level ( $r = 0.523$ ). Technical support lead a peaceful path to the sellers' nature and they developed a great surrounding together to supply their goods and services regarding their organic products. Through which, sellers identified the area which is demand to organic vegetables, started surviving in a competitive environment and adapted the right way to sell all their products ( $r = 0.588$ ,  $P < 0.01$ ). Conventional bedding plant growers considered fertility and substrate management and insect and disease management significant challenges in organic production that would serve as barriers to transitioning to this production technique<sup>12</sup>.

As the result, seller's living standard increased with the satisfactory transport facilities as well as the proper infrastructures. It showed a positive significant relationship as  $r = 0.577$  at  $P < 0.01$  level. On the other hand, damage of the vegetables and lack of safety and preservation of food influenced negatively on sellers' profit range, considerably. When the damage increases, the profit of sellers showed a rapid reduction ( $r = 0.454$ ,  $P < 0.05$ ) on their commodity. Further, relationship was negative with distance on the spot of production to market and public transport ( $P < 0.05$ ,  $r = -0.407$ ).

Health concerns are now on the distributors' hand through the right concept and benefits of organic products. More than this, "hope" of consumers should be considered with correct identification (labeling) on organic products. Mainly local markets is reliable (reasonable concern on price) one to purchase commodity rather than buying in supermarkets. Organic growers are motivated because they consider growing organic 'the right thing to do' rather than because of perceived price premiums for organic products<sup>13</sup>.

## Conclusion

Present study revealed that the factors influencing on organic farming (vegetables and fruits) and the economic status of sellers in Batticaloa District, Sri Lanka. Analyzed questionnaire survey showed the relationship among extent of cultivation, labelling, monthly income, price determination, expenditure, income, profit, expected income, extension services, technical supports etc. There was a positive significant relationship between monthly average income of the sellers and the extent of land, price determination, selling the entire commodity and economic status.

Extension services played a vital role in income growth of the top level farmers meant by education background. Available extension services negatively influenced with practical way of technical supports on poor level of farmers due to the lack of

basic knowledge and awareness of the sellers. Transportation was satisfaction with more than half of the sellers. It leads them to have a great deviation on their profit through successful selling of vegetables and fruits. However, if there is any damages over a commodity, it showed a great reduction on their selling of goods which was occurred due to the public transportation and poor road facility. As far as the price determination is concerned, location took part a great role in its nature. When move towards the urban area, price determination was higher. Hence, location took part a great role in price determination.

As the result, proper technical supports on food safety measure, labeling and data management systems lead the sellers towards the successful selling through the peaceful nature and where they were able to sell all the commodities they brought. Therefore it is concluded that, organic farming and cultivation can be promoted in Batticaloa District when considering those positive and negative impacts on price and profit determination as well the consumer preference.

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