

## Special Economic Zones and its Impact on Agriculture- A Case Study of Telangana State, India.

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**Abstract:** The study aims to study impact on agriculture by Special Economic Zones SEZs in Telangana. 30 operation SEZs are located in Telangana State. To assess impact of SEZs on Agriculture in Telangana, a random sampling method is adopted to draw sample respondents in SEZ located villages. Most of the respondent lost the fertile land and would lead to the problem of food security. A total of 676 acres of land lost by the 176 respondents.

**Key Words:** Land loser, Impact , Fertile land, Agriculture , Operational

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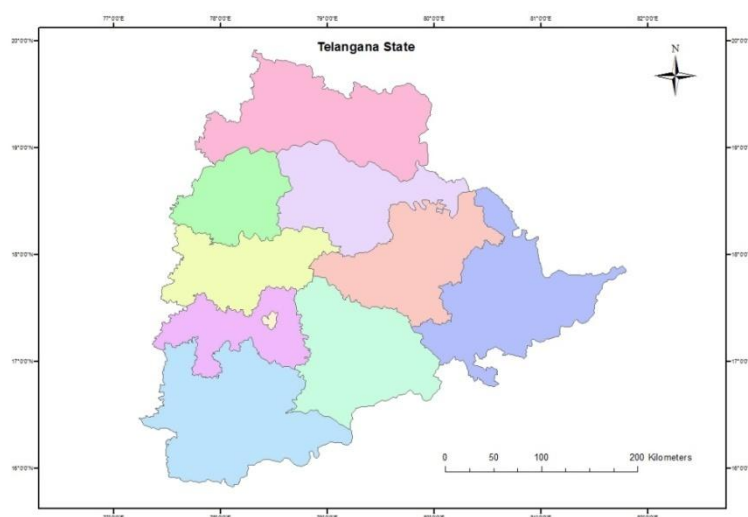
### I. Introduction

Special Economic Zone is the geographical area where the liberal laws and tax exemption to draw foreign direct investment and promote the exports(Chandrachude.S, 2014). In India the concept of SEZ taken from the China. Before the implantation of SEZ in India , the concept of Export Processing Zones (EPZs) were there. The first Export Processing Zones(EPZ)in kandla in the year 1960. A total of 222 operational SEZs are there in India. The 7 SEZ zones are there in India . Telangana falls in the Vishakhapatnam Zone , which also includes Andhra Pradesh and Chattisgarh. In Telangana 30 operational SEZs are there. To assess impact of SEZs on Agriculture in Telangana, a random sampling method is adopted to draw sample respondents in SEZ located villages. Most of the respondent lost the fertile land and would lead to the problem of food security. A total of 676 acres of land lost by the 176 respondents.

### II. Study Area

Telangana is the newly formed state India. Before formation of the Telangana. Telangana is located in 17° 07' 23" N to 79° 12' 31" E (fig 1). The total geographical area of the state is 114.8 lacs Hectares. The gross cropped area is 62.88 lacs Hectares.. The total population of Telangana is 3.52 crores as per the census of India. The total of 30 operational SEZs are located in this state.

Fig 1: Telangana State Map



Source: Government of Telangana

### III. Objective

The following objectives are framed to assess the impact of SEZs on Agriculture of Telangana

- To assess the impact of fertile agriculture land lost
- To assess the impact of different agriculture seasons

### IV. Methodology

To assess the impact of SEZs on agriculture a total of 240 respondents were drawn from 30 operational SEZs located villages using random sampling method.

### V. Impact On Agriculture

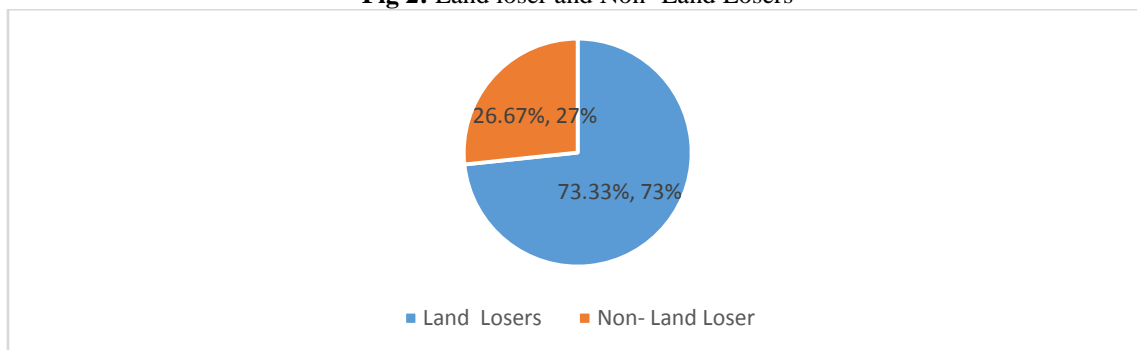
Agriculture is the primary occupation of most of the people of Telangana state. To assess the impact of special economic zones on agriculture, land lose and non-land lose respondents were asked to season wise, crop wise, net shown area. Out of 240 respondents 176 respondents lost their land due to establishment of SEZs in their village. 73.33% of total respondents lost the fertile agriculture land due to establishment of SEZs in their village.

**Table1:** Fertile Agriculture land losers

Land lost	Respondents	Percentage
Yes	176	73.33%
No	64	26.67%
<b>Total</b>	<b>240</b>	<b>100.00</b>

Source: Field Survey, 2017

**Fig 2:** Land loser and Non- Land Losers



Source: Table 1

#### 5.1 Land losers

Out of 176 land loser, majority of them lost 2 acres of land (table 2). The total area of the land lost by the respondents is 676 acres (table 2).

**Table 2:** Total Acres of Fertile Agriculture land lost

Land lost (Acres)	Respondents	Total land lost (Acres)
1	37	37
2	57	114
3	33	99
4	14	56
5	7	35
6	3	18
7	3	21
8	4	32
9	6	54
10	2	20
12	1	12
13	1	13
15	3	45
16	1	16
19	1	19
25	1	25

30	2	60
Total	176	676

Source: Field Survey, 2017.

### 5.1.1 Karif season :

The food crops, commercial crops and Pulses sown by the respondents and acres of land lost were also analyzed for the Karif Season.

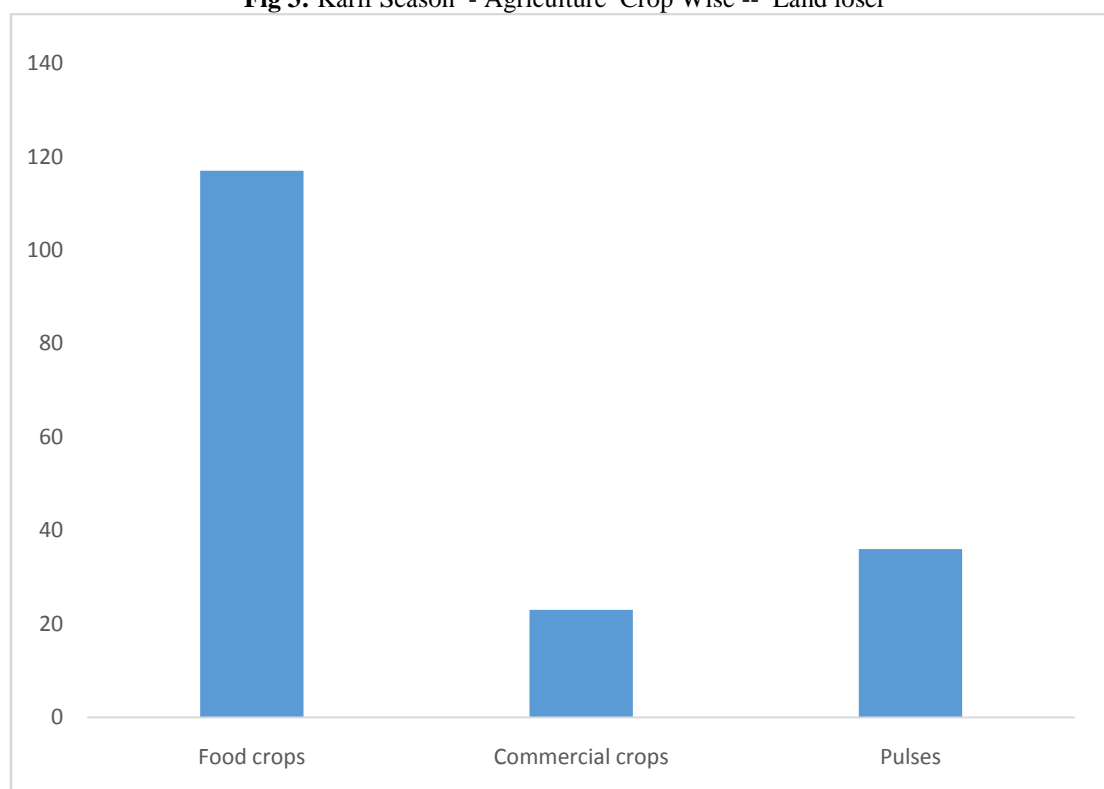
out of 176 land losers 117 were cultivated food crops, which constitute 66.47% (table 3) . The less number of respondents are from commercial crops (fig 3) The least percentage of 13.06% respondents shown a commercial crops(fig 4).

**Table-3:** Karif Season – Fertile land and Agriculture -- Land loser

Crops	Respondent	Percentage	Land in acres	Percentage
Food crops	117	66.48	452	66.87
Commercial crops	23	13.07	88	13.02
Pulses	36	20.45	136	20.11
<b>TOTAL</b>	<b>176</b>	<b>100</b>	<b>676</b>	<b>100</b>

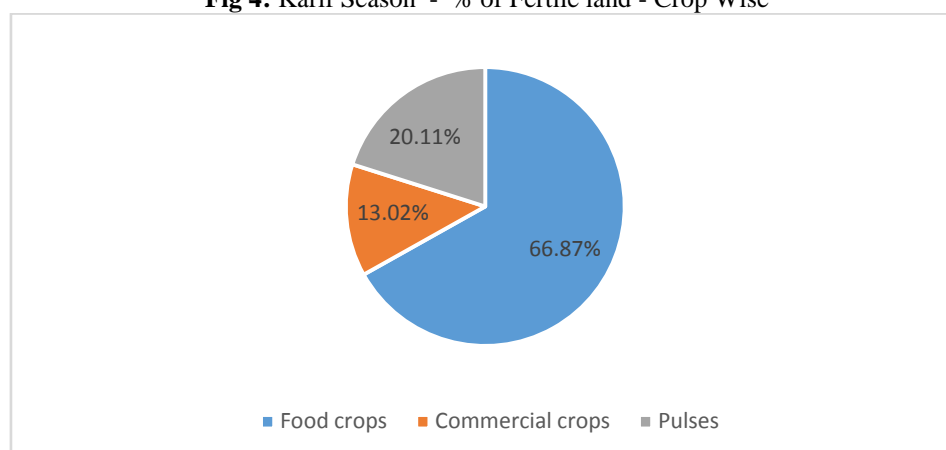
Source: Field Survey, 2017

**Fig 3:** Karif Season - Agriculture Crop Wise -- Land loser



Source: Table 3

**Fig 4: Karif Season - % of Fertile land - Crop Wise**



Source : Table 3

### Food crops:

The total of 289 acres cultivated jowar as a primary food crop .The fertile lands of 452 acres are shown for food crops.136 acres of land from 36 respondents shown pulses. Out of 117 respondents 75 were shown jowar, only 5.99% (table 4) respondents were shown paddy, the second largest cultivated food crops are maize which constitute 29.91%.

**Table 4: Karif Season – Food Crops -- Land loser**

Name of the crop	Respondents	Percentage	Land in acres	Percentage
Jowar	75	64.1	289	63.94
Maize	35	29.91	136	30.09
Paddy	7	5.99	27	5.97
<b>Total</b>	<b>117</b>	<b>100</b>	<b>452</b>	<b>100</b>

Source: field survey march 2018

**Commercial crops:** a total of 88 acres of land cultivated for commercial crop out of 676 acres of land lost by the 176 respondents most of the respondents cultivated cotton as a major commercial crop and is followed by mirchi and oil seed (table 5).

**Table 5: Karif Season – Commercial Crops -- Land loser**

Name of the crop	Respondents	Percentage	Land in acres	Percentage
Cotton	12	52.17	46	52.28
Mirchi	8	34.79	31	35.22
Oilseed	3	13.04	11	12.5
<b>Total</b>	<b>23</b>	<b>100</b>	<b>88</b>	<b>100</b>

Source: Field Survey, 2017

46 acres of land cultivated for cotton and 31 acres of land cultivated for mirchi, which is second largest commercial crop cultivated by respondents.52.17% respondents cultivated cotton as commercial crop where as 13.04% respondents cultivated oil seed as commercial crop.

### Pulses:

A total of 136 acres of land were cultivated out of 676 acres of land lost by the 176 respondents the major pulses of the area groundnut, red gram, cowpea, and groundnut cultivated in 72 acres and cowpea cultivated 38 acres of land. Out of 36 respondents who cultivated pulses 19 respondents which constitute, 52.78% cultivated groundnut.27.44% of respondents cultivated cowpea, 19.44% of respondents cultivated red gram.

**Table 6: Karif Season – Pulses - Land loser**

Name of the crop	Respondents	Percentage	Land in acres	Percentage
Groundnut	19	52.78	72	52.94
Cowpea	10	27.78	38	27.94
Red gram	7	19.44	26	19.12
<b>Total</b>	<b>36</b>	<b>100</b>	<b>136</b>	<b>100</b>

Source: Field Survey, 2017

### 5.1.2 Rabi season:

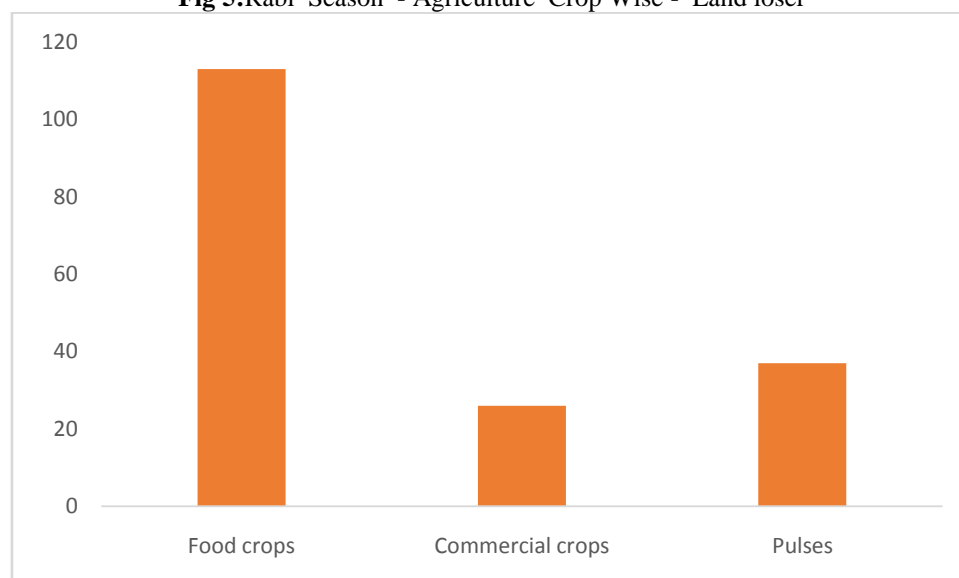
Rabi season starts from December to March. Out of 176 respondents 113 respondents cultivated food crops in this season an area of 433 acres of land is cultivated for food crops. The least amount of area 101 acres cultivated for commercial crops in this season (table 7). The commercial crop respondents are least in this rabi season (fig 5).

**Table 7:** Rabi Season – Fertile land and Agriculture- Land loser

Crops	Respondents	Percentage	Land in acres	Percentage
Food crops	113	64.2	433	64.05
Commercial crops	26	14.78	101	14.94
Pulses	37	21.02	142	21.01
<b>Total</b>	<b>176</b>	<b>100</b>	<b>676</b>	<b>100</b>

Source: Field Survey, 2017

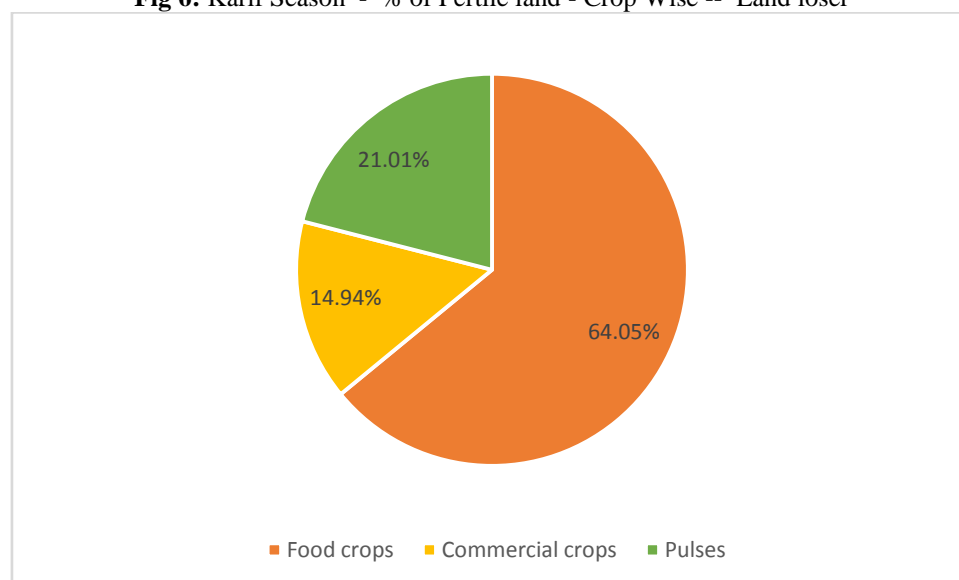
**Fig 5:** Rabi Season - Agriculture Crop Wise - Land loser



Source: Table 7

The percentage of 66.05 % of land utilized for the food crops in this season where as least percentage of 14.95% is for commercial crops (fig 6). The pulse which utilized the 21.01% of the fertile land to pulse cultivation.

**Fig 6:** Karif Season - % of Fertile land - Crop Wise -- Land loser



Source : Table 7

**Food crops:** 433 acres of land cultivated for food crops out of 676 acres land. 54.88% of respondents were cultivated jowar as main food crop in this rabi season, the second largest cultivated food crop is maize and which constitute 34.51%(table 8). a total of 151 acres of land cultivated for maize. Only 10% of respondents out of 113 cultivated paddy and cultivated in 46 acres.

**Table 8:**Rabi Season – Food Crops -- Land loser

Name of the crop	Respondents	Percentage	Land in acres	Percentage
Jowar	62	54.88	236	54.5
Maize	39	34.51	151	34.87
Paddy	12	10.61	46	10.63
<b>Total</b>	<b>113</b>	<b>100</b>	<b>433</b>	<b>100</b>

Source: Field Survey, 2017

**Commercial crops:** 101 acres of land cultivated for commercial crops out of 676 acres of land lost by 176 respondents. The major commercial crops in this rabi season was cotton, and is followed by oil seed. Majority of the land (89% acres) cultivated cotton and oil seed out of 101 acres of commercial crops cultivated (table 9).

**Table 9:**Rabi Season – Commercial Crops-- Land loser

Name of the crop	Respondents	Percentage	Land in acres	Percentage
Cotton	12	46.17	46	45.54
Mirchi	3	11.53	12	11.88
Oilseed	11	42.3	43	42.58
<b>Total</b>	<b>26</b>	<b>100.00</b>	<b>101</b>	<b>100.00</b>

Source: Field Survey, 2017

**Pulses:** out of 676 acres of land 142 acres cultivated for pulses in this season groundnut is the major cultivated pulses more than 50% of pulses cultivated land cowpea and red gram were major.43% of land cultivated for groundnut( table 10).

**Table 10:**Rabi Season – Pulses -- Land loser

Name of the crop	Respondents	Percentage	Land in acres	Percentage
Groundnut	16	43.25	61	42.96
Cowpea	11	29.73	43	30.28
Red gram	10	27.02	38	26.76
<b>Total</b>	<b>37</b>	<b>100.00</b>	<b>142</b>	<b>100.00</b>

Source: Field Survey, 2017

## 5.2. Non-land losers:

out of 240 respondents 64 members (table 1) were not lost the land due to SEZs establishment in their village. The total land available with this 64 respondents is 312 acres.

### 5.2.1 Karif season

The total of 988 acres of land available with 240 respondents of special economic zone villages. 676 acres of land lost because of special economic zone and 312 acres of land not effected by the special economic zones. The details of 312 acres of land given table 11

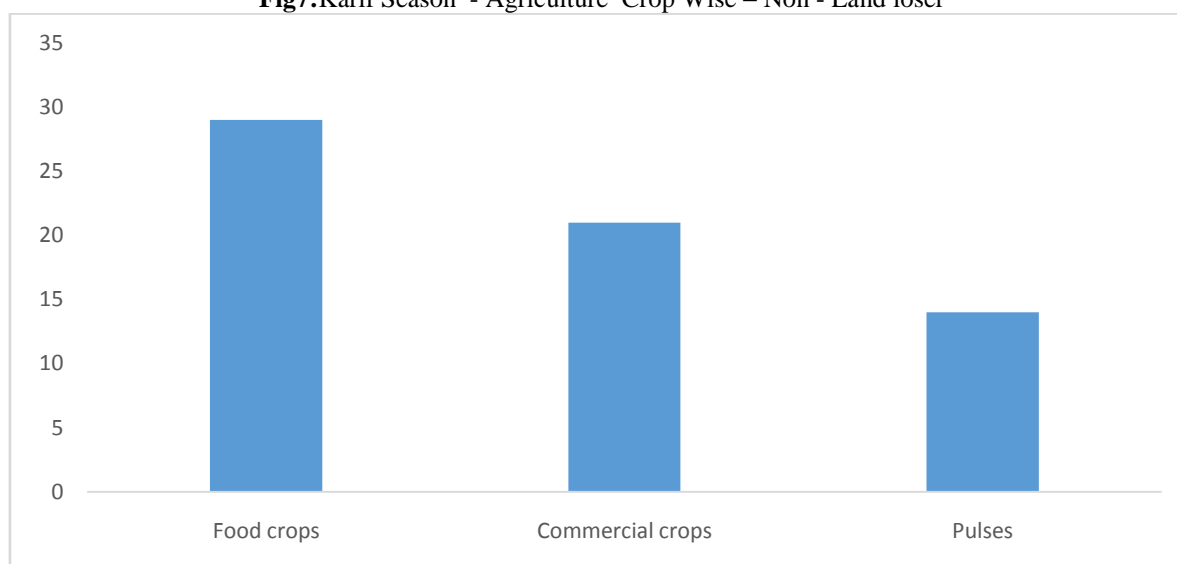
**Table 11:** Karif Season – Fertile land and Agriculture -- Non- Land loser

Crops	Respondents	Percentage	Land in acres	Percentage
Food crops	29	45.31	142	45.52
Commercial crops	21	32.81	102	32.69
Pulses	14	21.88	68	21.79
<b>Total</b>	<b>64</b>	<b>100</b>	<b>312</b>	<b>100</b>

Source: Field Survey, 2017

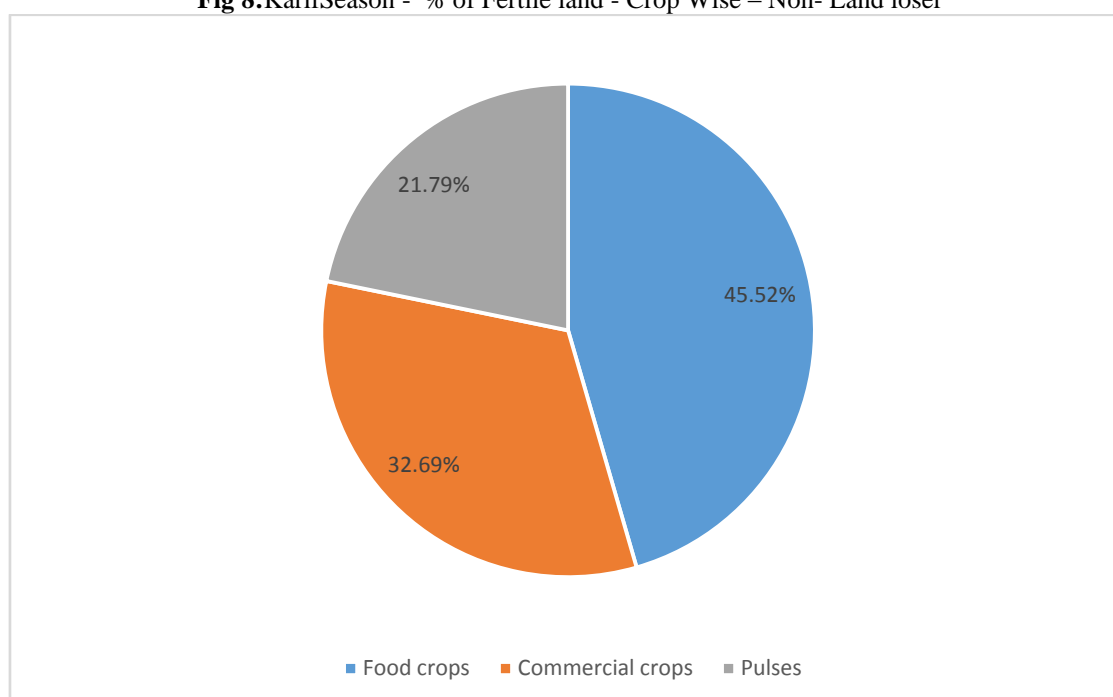
A total of 64 respondents and their cropping pattern shown that majority of the respondents cultivated food crops and the land utilized for these crops is 142 acres (fig 7). The next cultivated crops are commercial crops, which constitute 32.81% (fig 8)and utilized 102 acres of land.

**Fig7:**Karif Season - Agriculture Crop Wise – Non - Land loser



Source : Table 11

**Fig 8:**KarifSeason - % of Fertile land - Crop Wise – Non- Land loser



Source: Table 11

**Food grains:**Most of the respondentscultivatejowar as primary food crop, land utilize for jowar is 69 acres. And is followed by maize with 27.59%. The Maize is cultivated by only 8 respondents out of 29 food grain cultivated. Land of 39 acres of maize respondents is second largest in terms of fertile land utilized for cultivation. Paddy with least number of respondent in this season , which constitute of 24.13 % of total food grain cultivators of non – land losers

**Table 12:**Karif Season – Food Crops - Non- Land loser

Name of the crop	Respondents	Percentage	Land in acres	Percentage
Jowar	14	48.28	69	48.59
Maize	8	27.59	39	27.46
Paddy	7	24.13	34	23.95
<b>Total</b>	<b>29</b>	<b>100</b>	<b>142</b>	<b>100</b>

Source: Field Survey, 2017

**Commercial crops:** the least members of respondents cultivated oil seed as commercial crops the land use for this crop is 16 acres. More than 80% of the respondents cultivated cotton and mirchi as major commercial crops, and the land utilized for this is 86 acres. The oil seed is cultivated only 3 respondents, which constitutes 14.28 % (table 13) of total commercial crops cultivators of non- land losers in this season. The total of 102 acres of land is under cultivation of commercial crops.

**Table 13:**Karif Season – Commercial Crops - Non- Land loser

Name of the crop	Respondents	Percentage	Land in acres	Percentage
Cotton	11	52.39	52	50.98
Mirchi	7	33.33	34	33.33
Oilseed	3	14.28	16	15.69
<b>Total</b>	<b>21</b>	<b>100</b>	<b>102</b>	<b>100</b>

Source: Field Survey, 2017

**Pulses:** cowpea and red gram are sanely cultivated by the respondents, the land use for cultivation of red gram and cowpea is 8 acres. Most the respondents 42.86% cultivated groundnut as primary pulses crop. The Cow pea and Red gram cultivate respondents are 4 each (talbe 14). The total of 68 acres of land is utilized for cultivation of pules of 14 respondents.

**Table 14:**Karif Season – Pulses - Non- Land loser

Name of the crop	Respondents	Percentage	Land in acres	Percentage
Groundnut	6	42.86	29	42.65
Cowpea	4	28.57	21	30.88
Red gram	4	28.57	18	26.47
<b>Total</b>	<b>14</b>	<b>100.00</b>	<b>68</b>	<b>100.00</b>

Source: Field Survey, 2017

**5.2.2 Rabi season:** a total of 152 acres of land cultivated for food crops, which constitute 48.43% of land. The least cultivated crop is commercial crop. The Pulses with 18 respondents, constitute of 28.14 % is the second crops in rabi season in non- land losers. The 87 (table 15) acres of land is utilized for the cultivation of Pulses in this season by respondents. The least number of 15 respondents from the commercial crops cultivators.

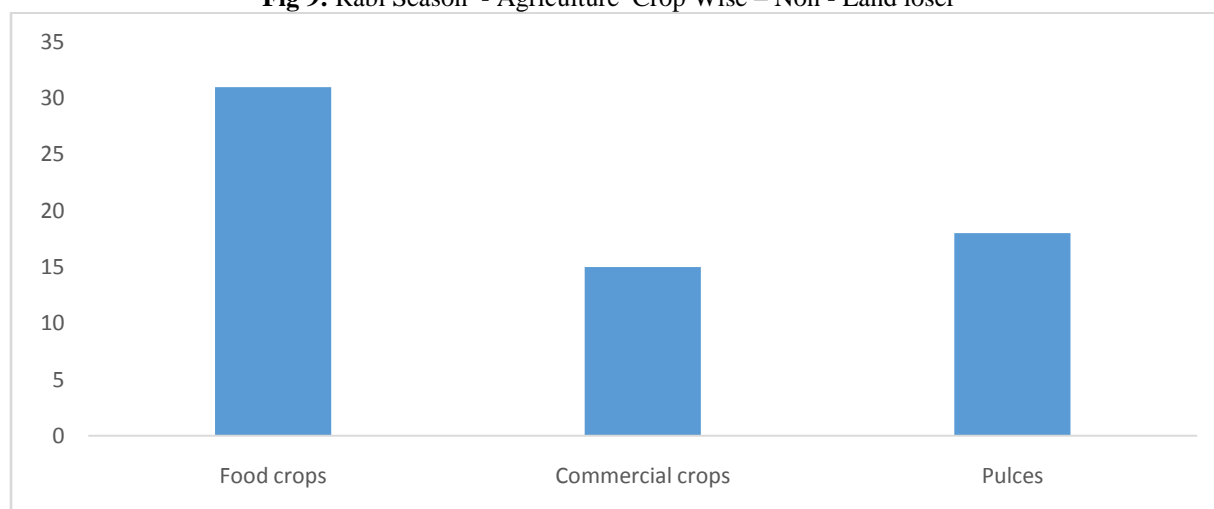
**Table 15:** Karif Season – Fertile land and Agriculture -- Non- Land loser

Crops	Respondents	Percentage	Land in acres	Percentage
Food crops	31	48.43	152	48.72
Commercial crops	15	23.43	73	23.39
Pulses	18	28.14	87	27.89
<b>Total</b>	<b>64</b>	<b>100.00</b>	<b>312</b>	<b>100.00</b>

Source: Field Survey, 2017

The majority of the respondents who cultivated crops are belongs to food crops in this season by the non- land losers (fig 9). The reaming are Pulses and commercial crops in this season.

**Fig 9:** Rabi Season - Agriculture Crop Wise – Non - Land loser

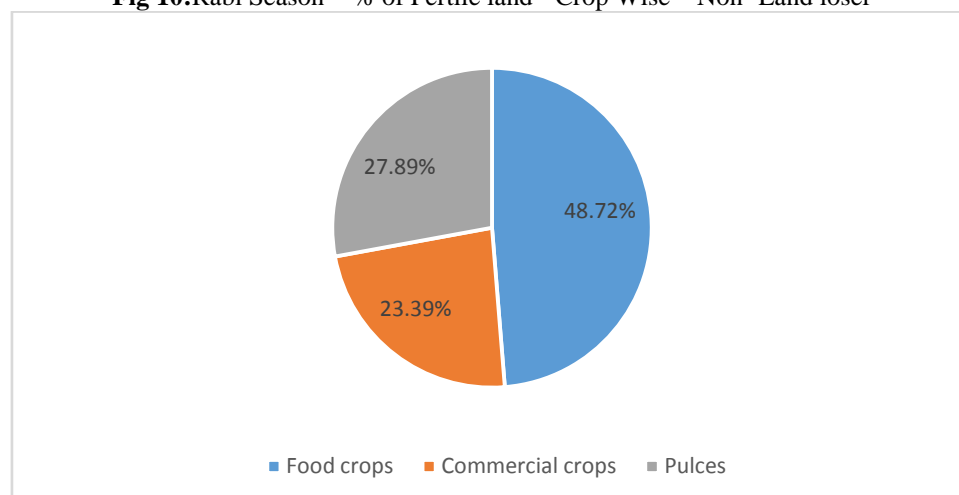


Source : table 15



Nearly half of the respondents land is used for cultivation of food grains which constitute of 48.72 % (fig 10). The remaining land is utilized for more or less equally for commercial and food crops

**Fig 10:**Rabi Season - % of Fertile land - Crop Wise – Non- Land loser



Source : Table 15

**Food crops:** more than 50% of the respondents cultivated jowar as a primary food crop which constitute 78 acres of land (table 16). After jowar most of the respondents cultivated maize as a secondary food crop. Only few respondents cultivated paddy.

**Table 16:** Rabi Season – Food Crops - Non- Land loser

Name of the crop	Respondents	Percentage	Land in acres	Percentage
Jowar	16	51.62	78	51.32
Maize	9	29.03	43	28.29
Paddy	6	19.35	31	20.39
<b>Total</b>	<b>31</b>	<b>100.00</b>	<b>152</b>	<b>100.00</b>

Source: Field Survey, 2017

**Commercial crops:** 33 acres of land is cultivated cotton as primary commercial crop out of 73 acres of commercial crop land (table 17). The mirchi is the second largest commercial crop which utilized 24 acres of land.

**Table 17:**Rabi Season – Commercial Crops - Non- Land loser

Name of the crop	Respondents	Percentage	Land in acres	Percentage
Cotton	7	46.67	33	45.21
Mirchi	5	33.33	24	32.87
Oilseed	3	20	16	21.92
<b>Total</b>	<b>15</b>	<b>100.00</b>	<b>73</b>	<b>100.00</b>

Source: Field Survey, 2017

**Pulses:** groundnut is the major pulses crop, and out of 18 respondents 8 respondents cultivated groundnut. Cowpea is cultivated 29 acres of land out of 87 acres of land available for pulses cultivation, which constitute 33.33% of land (table 18).

**Table 18:**Rabi Season – Pulses - Non- Land loser

Name of the crop	Respondents	Percentage	Land in acres	Percentage
Groundnut	8	44.44	39	44.83
Cowpea	6	33.33	29	33.33
Red gram	4	22.23	19	21.84
<b>Total</b>	<b>18</b>	<b>100</b>	<b>87</b>	<b>100</b>

Source: Field Survey, 2017

From the analysis of land loser and non loser it is observed that before SEZ 988 acres of fertile land is available for agriculture with 240 respondents whereas after SEZ only 312 acres of land is available for agriculture.

## **VI. Conclusion**

Out of 988 acres of land only 312 acres land is available for cultivation due to the impact of special economic zones in the selected villages, among selected respondents. It means that 68.42% of agriculture land lost. 45.74% of food grains production land in kharif season. And 43.82% of land food grain land in rabi season are available for production of food grains due to the impact of special economic zones. And it will lead to deficiency in availability of food grains its leads to food security.

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