Species-wise Gross Value Addition of Fisheries Sector in the economy of Haryana

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Abstract

National Accounts Statistics brought out by National Statistical Office; Government of India presents the contribution of fisheries sector in the economy of India as well as in the state of Haryana regularly. However, it does not provide species-wise contribution of fisheries sector in the economy. Gross Value Addition (GVA) of fisheries sector is the sum total of species-wise GVA of fisheries sector. So for gauging the performance of entire fisheries sector, it is important to ascertain the performance of different species in terms of their GVA. In this paper an attempt has been made to develop a model for estimating the species and district-wise GVA of fisheries sector in Haryana. This will help in getting micro level inputs for structured planning for the fisheries sector for the Haryana. Two immediate conclusions of the analysis are: highest contribution of Rohu fish irrespective of the districts of the State and huge variation of contribution in the fisheries economy among the districts.

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Remarks: The views expressed, herein, are solely of the author and does not represent that of the Organisation where he is serving.

1. Introduction:

Central Government has played an important role in the development of fisheries sector (Reference 1) as this sector is principal source of livelihood for a large section of economically underprivileged population of the country. This sector has also an important role in the Indian economy because of its contribution to the national income, exports, food and nutritional security and in employment generation. Over the period, the high production of fisheries sector contributed significantly to the economic growth of the nation. The contribution of fisheries sector in the Gross Value Addition of the country during the financial year 2018-19 is almost 1% (at constant price:2011-12) and has a average growth of around 11% over the last five years which is higher than the growth rate of Agriculture

sector. Government of India has identified the thrust areas to achieve the targeted production with sustainable development of the country in a focused manner. For giving due focus to the fisheries sector, Government of India carved out the fisheries division out of the erstwhile Department of Animal Husbandry Dairying & Fisheries and created a separate Department of Fisheries and then further Ministry of Fisheries, Animal Husbandry and Dairying.

Fish being an affordable and abundant source of animal protein, is regarded as one of the healthiest options to mitigate hunger and nutrient deficiency (Reference 2). In order to attain food and Nutritional security, fish production needs to be boosted, which requires heavy investment, especially in feed production, spawn centres, disease surveillance, creation of infrastructure like cold storage, quality fish landing centres, energy efficient vessels, equipping with marine safety measures, development of market yards, waste disposal/processing plants and strick adherence with SPS measure (Reference 3). Government of India has taken several initiatives to enhance the fish production of the country. One of the centrally sponsored schemes in the fisheries sector was Blue Revolution which started from the year 2015-16 for the five years with the aim of integrated development and management of fisheries. The scheme has showed immense result and enhanced the fish production, productivity, post harvest infrastructure and marketing.

The country growth story of fisheries sector is the actual sum of the growth of each and every State /UT of India. Some of the states have shown excellent example of success story and have lifted the entire fisheries sector of the country. Haryana is one of them. Haryana has the high contribution due to the fisheries sector in the state economy. In terms of value the total GVA due to fisheries sector is Rs. 2289 crore in the state of Haryana for the year 2018 -19.

Haryana is a small state in size, having limited resources of water bodies and almost vegetarian population, still the state is contributing significantly in the fisheries economy of the country. The table given below indicates that the GVA per hectare of water body in Haryana is more than double than the National figures. This achievement of Haryana is possible because of ground level policy framework for comprehensive development of the fisheries sector of the state.

Table 1: Mapping of GVA due to Fisheries Sector with per hectare of water body:2018-19			
	GVA due to Fisheries Sector (Rs. Crore)	Total Water Body (Ha)	GVA per Hectare of Water Body (Rs.)
Haryana	2,289	40.000	5,72,250
All-India	2,12,915	82,46,662.17	2,58,183

Source: Author's own Calculation

The above success story of fisheries sector of Haryana can be more impressive if Haryana starts planning at micro level i.e. at the fish species level and also at the district level within the state. With the help of species wise and district – wise Gross Value calculation the policy makers will get inputs at the disaggregated level which will help to plan for enhancing production of particular high contributing species in scientific manner. With this background an attempt has been made to develop a model for estimating the Gross Value Addition due to

fisheries sector for different species level within the various districts of the State. For this the production approach methodology of the national account has been used.

The model developed for Haryana can be further enlarged for the entire country. This analysis will help to have a micro level policy input for the overall and sustainable growth of the Fisheries Sector.

2. Data Source:

The data source for fish production and unit price of fish (Fish price per KG) is the Department of Fisheries, Government of Haryana.

Based on the fish culture practices, rainfall, temperature, soil condition and other geographical parameters, the State of Haryana is divided into 3 zones for the estimation of production of fish. A sample of three districts from high rainfall stratum, sample of two districts from moderate rainfall stratum and one district from low rainfall stratum are selected. The sampling frame of all the selected districts is prepared by enlisting all the villages of each district. This frame is further divided into 3 strata in such a way that the number of villages in each stratum is nearly equal. From each stratum within a district, six villages (called key villages) are selected at random from the list of villages. A random sample of 4 villages surrounding each of the key villages, are then selected. In this way, a sample of six clusters of 5 villages each in a stratum is selected. A cluster of villages will constitute the first stage unit and the ponds within cluster as the second stage unit. Selected villages are surveyed completely and all the water units in the village are enumerated by physical observation for estimating the average area under water units.

After completing the above information, a random sub-sample of 5 water bodies are selected from each cluster for observing fish catch from the sub-sample of water units. Further, sampling in time is also adopted, so that each water unit is visited at least once in a month for recording the catch more accurately and for providing for estimates of monthly catches. This sample is used for estimation of catch of fish from this class of resources. With the help of above sampling method, total species-wise fish production has been estimated, separately for all the districts of Haryana and the same is given in table 5 of Annexures. The data on fish production given in table 5 also includes production from subsistence fishing, which is estimated at 12.5% of inland fish production separately for each fish species and districts wise.

The price data of different species of fish is being collected by the Department of Fisheries, Government of Haryana from the assembling centers. The assembling centers are demarcated separately for each districts of the Haryana and data on price of fish per kg is collected on regular basis. After collection of data on different time span, an average price for the year has been worked out separately for different species of the fish and for each district of the state of Haryana and the same is given in table 6 of Annexures.

3. Method:

The Gross Value Addition (GVA) from the fisheries sector for the state of Haryana has been estimated by production approach of the economy. It involves the estimation of total value of outputs at factor cost and deducting the value of various inputs (at purchaser price) which are used in the process of production. The same is represented as below:

Value of inputs of Fisheries Sector ------------------1

The Methodology for the estimation of value of outputs and various inputs is discussed below in details.

3.1. Estimation of Value of Output:

The value of output is estimated by multiplying production of fish with the unit price of Fish. Here unit price of fish means Fish price per KG, separately for individual fish species. The same can be reproduced as below:

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Since a number of species of fish are being produced in the state of Haryana, so the value of output can be arrived as follows:

(Fish Production) $_i$(Unit Price) $_1$ -----------3

Where,

$$I = 1, 2, 3.........................N$$

N= Number of species of fish produced in the state of Haryana in the particular Year

So, with the help of above formula, the value of output of fish production can be calculated at district level itself.

Further, 12.5% of fish production of different species in the state of Haryana is taken as subsistence fishing. The value of output of subsistence fishing has also been calculated separately for individual species of fish at districts level by taking the same unit price (species wise) of inland fishing and same formula mentioned above. The ratio of 12.5% of subsistence fishing of total Inland fishing has been arrived on the basis of available study.

3.2. Estimation of Value of Inputs:

The value of inputs has components like operational costs, repairment costs and maintenance costs in case of both Inland Fishing and Subsistence Fishing. The operational cost includes expenditure on boats, fishing gears, cast-nets, consumption of diesel, etc.

The value of inputs has been arrived at the rate of 10% and 1% of the value of outputs for the Inland Fishing and Subsistence Fishing, respectively. The same can be reproduced as below:

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3.3. Estimation of GVA at State Level:

GVA due to the individual species of fish at districts level has been calculated with the help of formula given below:

$$(GVA)_{IJ} = (Value\ of\ Output)_{IJ}\ -\ (Value\ of\ Inputs)_{IJ} \text{ ---------------6}$$

Where,

$$I = 1, 2, 3..........................N$$

$$J = 1, 2, 3..........................M$$

N= Number of species of fish produced in the state of Haryana in the particular Year

M= Number of Districts in the state of Haryana

Further, GVA of fisheries sector for any district of the Haryana can be calculated with the help of following formula:

$$(GVA)_J = (GVA)_{IJ} \text{ ----------------------------7}$$

For each J = 1, 2 3, -------------------M (Number of Districts)

GVA of fisheries sector has been calculated at state level with the help of formula given below:

$$(GVA)\ =\ (GVA)_{IJ} \text{ ----------------------------8}$$

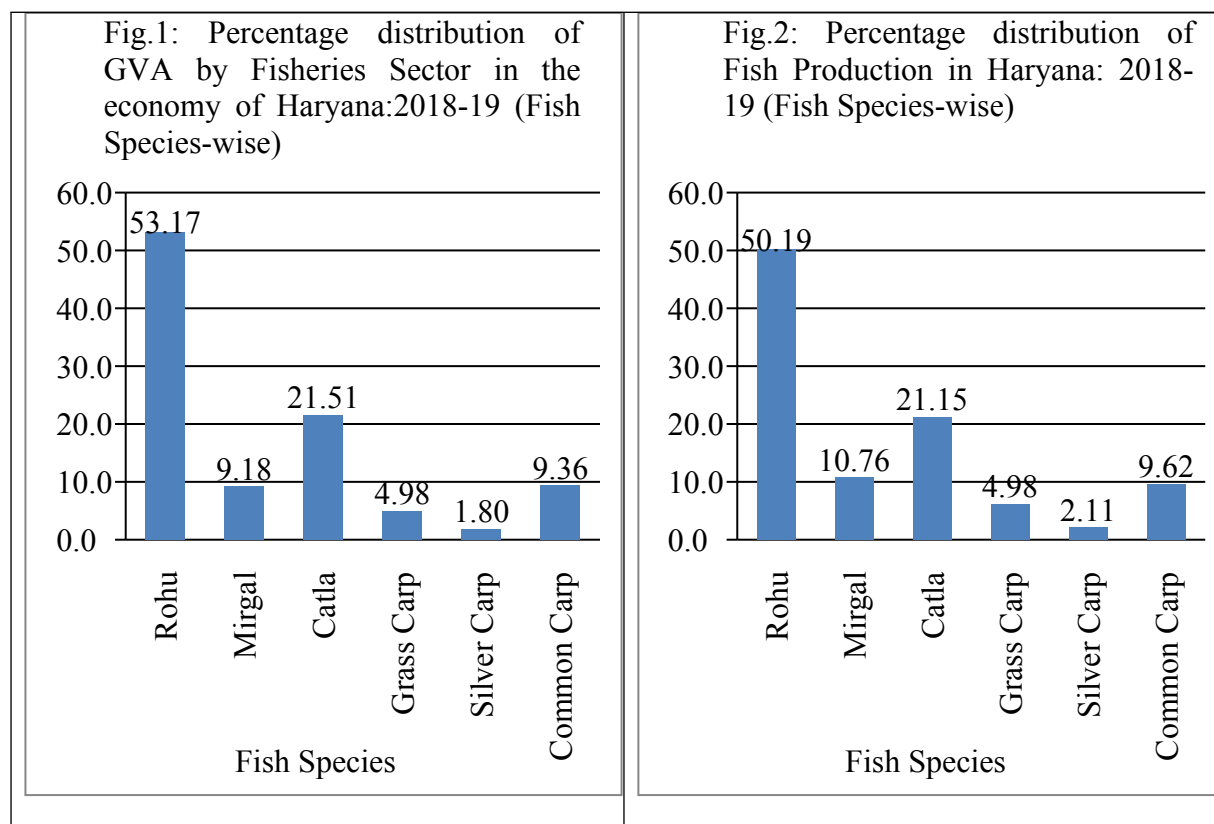N= Number of species of fish produced in the state of Haryana in the particular Year

M= Number of Districts in the state of Haryana

4. Findings:

The District – wise and species – wise Gross Value Addition due to fisheries sector in the economy of Haryana for the financial year 2018-19 is discussed in detail in the following sections.

4.1. Gross Value Addition (GVA) – Fish Species-wise:

The total contribution of the Fisheries Sector in the Economy of Haryana during the financial year 2018-19 was Rs. 2,289 crores (Table 6 of Annexure). The analysis given in Figure 1 indicates that Rohu fish has highest contribution in fisheries economy of the state. The second highest contribution was due to Catla Fish which was followed by Common Carp and Mirgal Fish. Infact the contribution of Rohu and Catla Fish was three-fourth of the total fisheries economy of Haryana.

Fig.1: Percentage distribution of GVA by Fisheries Sector in the economy of Haryana:2018-19 (Fish Species-wise)

Fig.2: Percentage distribution of Fish Production in Haryana: 2018-19 (Fish Species-wise)
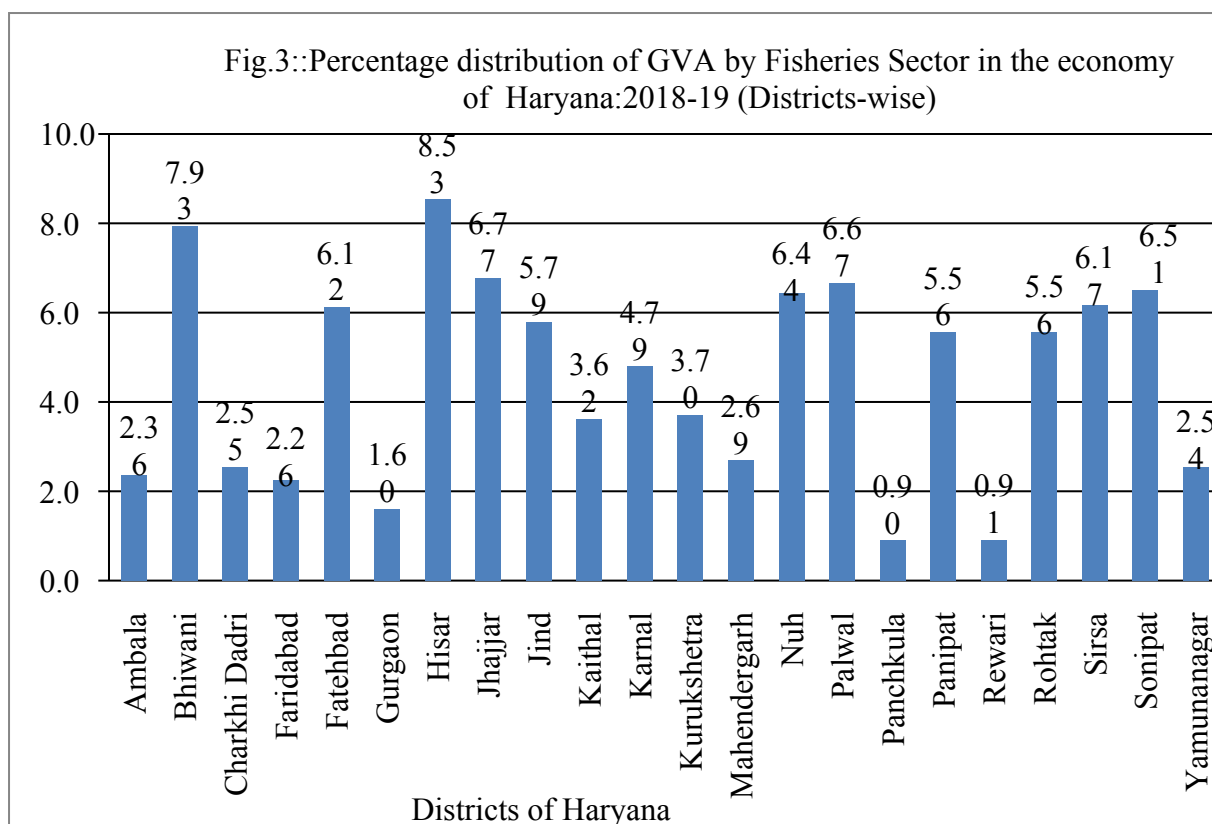
Source: Author's own Calculation

An attempt has also been made to analysis the fish Production of Individual species in the state and the same is given in Figure 2. The production data reveals that Haryana has highest Fish production of Rohu fish followed by Catla Fish and Mirgal Fish. Infact half of the fish production in the Haryana is of Rohu Fish alone.

4.2. Gross Value Addition (GVA) - Districts-wise:

District-wise, contribution of Fisheries Sector in the economy of Haryana during the financial year 2018-19 has been analysed and it is found that the highest contribution is from district of Hisar followed by Bhiwani and Jhajjar. Other districts which have high contribution are Sonipat, Sirsa, Palwal, Nuh and Fatehbad. On the other hand the lowest contribution is found to be of the district of Panchkula and Rewari. The share of both the districts is less than 1%. The other districts with low contribution are Gurgaon, Faridabad and Ambala.

Fig.3::Percentage distribution of GVA by Fisheries Sector in the economy of Haryana:2018-19 (Districts-wise)

Source: Author's own Calculation

The district – wise fish production data also indicates the dominance of fish production in the district of Hisar followed by Bhiwani and Jhajjar and reverse for the district of Panchkula and Rewari. It is important to map the fish production of individual districts with the available resources and policy level intervention of state Government.

4.3. Gross Value Addition (GVA) – Fish Species and Districts-wise:

The species-wise analysis of GVA of fisheries sector (Table 2 at Annexures) in the economy of the districts of Haryana during 2018-2019 reveals some interesting facts. The highest contribution in the Fisheries economy is found to be due to Rohu Fish irrespective of the Districts. However, among the districts a small variation has been noticed. To be more precise the contribution in the Fisheries economy due to the Rohu Fish is found to be less in the districts of Ambala, Bhiwani, Charkhi Dadri, Kaithal, Karnal, Kurukshetra, Mahendergarh, Panchkula and Yamunanagar than the corresponding State contribution.

The second highest contribution in the Fisheries economy is found to be due to Catla Fish across the Districts. It is interesting to note that the contribution in the Fisheries economy due to Catla Fish is found to be less in the districts of Bhiwani, Faridabad, Fatehbad, Gurgaon, Hisar, Jhajjar, Jind, Kaithal, Nuh, Palwal, Panipat, Rewari, Rohtak, Sirsa and Sonipat than the corresponding State contribution. Further, the third highest contribution in the fisheries economy of Haryana is found to be due to Mirgal Fish in some of the districts and in rest of the districts due to the Common Carp fish. The districts where contribution of Common Carp Fish is higher than the Mirgal are Ambala, Bhiwani, Charkhi Dadri, Kaithal,

Karnal, Kurukshetra, Mahendergarh, Panchkula and Yamunanagar. The lowest contribution of GVA in the fisheries economy of the state is found to be due to the fish Silver Carp across the districts.

The percentage distribution of GVA due to different Fish species among the economy of Districts of Haryana has also been worked out and the same is given in table 3 at Annexures. It may be observed that the District Hisar has highest contribution in the economy of state due to fisheries sector. This has been noticed in respect of all fish species produced in the districts during the financial year 2018-19 except Common Carp. For the common Carp the highest contribution of GVA is of the district of Bhiwani. Analysis at the district level reveals that the contribution of Rewari district in the state economy due to the fisheries sector is less than 1% irrespective of the fish production in the districts. The figure is less than 2% in the districts of Panchkula and Gurgaon. One possible reason may be high urbanization in these districts. The other reason may be the lack of water resources in these districts.

The official data of per capita fish consumption published by National Sample survey organisation in its report No. 558 reveals almost no fish consumption in Haryana. Also the same report reveals that less than 1 % percentage households reported fish consumption in rural Haryana and less than 2 % in urban Haryana. This indicates that the domestic fish consumption in the Haryana is negligible. Probably the approachable market for the Haryana fish is Delhi and Haryana has well structured market linkages. Haryana has also developed resources for the fisheries sector in planned way which resulted in 1.84 lakhs tonnes of total fish production the state during the financial year 2018-19.

4. Conclusion and way forward:

The developmental policy making of any country has to be rooted at micro-level and aggregated at various levels to reach at country level. For instance, the overall economic growth is a reflection of the smallest economic activities of the country. The same is true for each sector of the economy including Fisheries Sector. Thus, if the aim is to achieve high growth in fisheries sector than the focus should be on development at micro-level, that is at Individuals species and smallest geographical level.

This paper finds it foundation on the aforementioned premises. It is worth mentioning that India has well developed National Accounts System for estimating Gross value Addition due to the fisheries sector. But the estimation of Gross value Addition due to the different species of fish is not available. So there is a technical gap. The reason may be many. The methodology developed in the paper for estimating the Gross value Addition due to the different species of fisheries sector reduces this technical gap. The model developed in this paper for Haryana can be applied for any State/UT or all States/Uts together with reference to specific time period.

The results of the paper reflect clearly the contribution of different species in the economy of Haryana at district level. Also one can get clear insights about the contribution of fisheries sector according to different geographical regions of Haryana. Results indicate the districts of Haryana which have less than 1% and 2% contribution in the fisheries economy of state. This

will help in working out, for these particular districts, policies with an objective to increase their contribution in the fisheries economy of state. The share of GVA due to fisheries sector of Haryana in National GVA due to Fisheries sector was around 1% during the year 2018-19. Also GVA per hectare of water bodies in Haryana is more than double than the National figures. These two indicators are self explanatory about the significant potential of fisheries sector of Haryana.

The fisheries sector of the Haryana can be optimised with ground level policy framework and probably can be made one of the foremost growing sector. For the policy framework, the model developed for the estimation of GVA of fisheries sector at the disaggregated level in this paper will help in getting the insights which will help to plan in scientific manner. Also, the model developed for Haryana can be further enlarged for the entire country to have a micro level policy input for the overall and sustainable growth of the Fisheries Sector.

References

1. Vasisht, Amit Kumar and Singh, Dharma Raj (2009): "An analysis of capital formation in fisheries sector in India", Asian Fisheries Science, 22(2009): 823-837.
2. Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India, "Vision 2024", December 2019.
3. Suresh A and Singh, P Shinoj (2018): "Capital formation in fisheries sector in India: tends, compositional changes and potential implications for sustainable development", Agricultural Economics Research Review, 2018, 31(conference Number), 111-122.
4. Government of India (2011-12): "Households Consumer expenditure", Report No 588, National Sample Survey Organisation.

Districts	Fish Species					
	Rohu	Mirgal	Catla	Grass Carp	Silver Carp	Common Carp
Ambala	47.89	8.51	23.50	5.66	1.70	12.73
Bhiwani	52.76	8.52	20.29	4.06	1.70	12.66
Charkhi Dadri	45.98	10.27	21.56	4.88	2.57	14.76
Faridabad	54.91	9.38	21.32	4.87	1.71	7.80
Fatehbad	54.91	9.38	21.32	4.87	1.71	7.80
Gurgaon	54.91	9.38	21.32	4.87	1.71	7.80
Hisar	54.91	9.38	21.32	4.87	1.71	7.80
Jhajjar	54.91	9.38	21.32	4.87	1.71	7.80
Jind	55.04	9.31	21.34	4.83	1.69	7.79
Kaithal	50.06	8.52	21.47	6.48	1.70	11.76
Karnal	48.94	7.66	22.47	5.66	2.55	12.72
Kurukshetra	47.89	8.51	23.50	5.66	1.70	12.73
Mahendergarh	47.09	10.27	21.58	5.69	2.57	12.80
Nuh	54.91	9.38	21.32	4.87	1.71	7.80
Palwal	54.91	9.38	21.32	4.87	1.71	7.80
Panchkula	45.86	10.34	21.53	4.92	2.58	14.77
Panipat	54.91	9.38	21.32	4.87	1.71	7.80
Rewari	55.04	9.31	21.34	4.83	1.69	7.79
Rohtak	54.91	9.38	21.32	4.87	1.71	7.80
Sirsa	54.91	9.38	21.32	4.87	1.71	7.80
Sonipat	54.91	9.38	21.32	4.87	1.71	7.80
Yamunanagar	47.89	8.51	23.50	5.66	1.70	12.73
Total(Haryana)	53.17	9.18	21.51	4.99	1.80	9.36

Table.2: Percentage distribution of GVA of fisheries sector in the economy of each Districts of Haryana:2018-19(Species-wise)

Source: Author's own Calculation

Table.3: Percentage distribution of GVA due to different Fish species among the economy of Districts of Haryana:2018-19

Districts	Fish Species					
	Rohu	Mirgal	Catla	Grass Carp	Silver Carp	Common Carp
Ambala	2.13	2.19	2.58	2.68	2.24	3.21
Bhiwani	7.87	7.37	7.49	6.45	7.52	10.73
Charkhi Dadri	2.21	2.85	2.56	2.49	3.64	4.02
Faridabad	2.33	2.31	2.24	2.20	2.14	1.88
Fatehbad	6.32	6.26	6.07	5.97	5.81	5.10
Gurgaon	1.65	1.64	1.59	1.56	1.52	1.33
Hisar	8.81	8.73	8.46	8.33	8.10	7.11
Jhajjar	7.00	6.92	6.72	6.61	6.42	5.64
Jind	6.00	5.88	5.75	5.60	5.46	4.82
Kaithal	3.41	3.36	3.62	4.70	3.43	4.55
Karnal	4.41	4.00	5.01	5.43	6.81	6.51
Kurukshetra	3.34	3.44	4.05	4.20	3.51	5.04
Mahendergarh	2.38	3.01	2.70	3.07	3.84	3.68
Nuh	6.65	6.59	6.39	6.29	6.11	5.37
Palwal	6.89	6.82	6.61	6.51	6.33	5.55
Panchkula	0.78	1.01	0.90	0.89	1.29	1.42
Panipat	5.74	5.69	5.51	5.43	5.28	4.63
Rewari	0.94	0.92	0.90	0.88	0.86	0.76
Rohtak	5.75	5.69	5.52	5.43	5.28	4.63
Sirsa	6.37	6.31	6.11	6.02	5.85	5.14
Sonipat	6.72	6.66	6.46	6.36	6.18	5.42
Yamunanagar	2.29	2.36	2.78	2.88	2.41	3.46
Total(Haryana)	100.00	100.00	100.00	100.00	100.00	100.00

Source: Author's own Calculation

S. No.	District Name	Rohu	Mirgal	Catla	Grass Carp	Silver Carp	Common Carp	Total
				Table.4. Fish Production(KG) for the year 2018-19				
1	Ambala	20,25,450	4,50,100	10,35,230	3,15,070	90,020	5,85,130	45,01,000
2	Bhiwani	72,00,000	14,40,000	28,80,000	7,20,000	2,88,000	18,72,000	1,44,00,000
3	Charkhi Dadri	20,97,110	5,85,240	10,24,170	2,92,620	1,46,310	7,31,550	48,77,000
4	Faridabad	21,32,000	4,51,000	8,61,000	2,46,000	82,000	3,28,000	41,00,000
5	Fatehbad	57,79,800	12,22,650	23,34,150	6,66,900	2,22,300	8,89,200	1,11,15,000
6	Gurgaon	15,10,600	3,19,550	6,10,050	1,74,300	58,100	2,32,400	29,05,000
7	Hisar	80,60,000	17,05,000	32,55,000	9,30,000	3,10,000	12,40,000	1,55,00,000
8	Jhajjar	63,96,000	13,53,000	25,83,000	7,38,000	2,46,000	9,84,000	1,23,00,000
9	Jind	57,04,400	12,06,700	23,03,700	6,58,200	2,19,400	8,77,600	1,09,70,000
10	Kaithal	32,43,000	6,90,000	14,49,000	5,52,000	1,38,000	8,28,000	69,00,000
11	Karnal	41,96,120	8,20,980	20,06,840	6,38,540	2,73,660	11,85,860	91,22,000
12	Kurukshetra	31,72,500	7,05,000	16,21,500	4,93,500	1,41,000	9,16,500	70,50,000
13	Mahendergarh	22,66,000	6,18,000	10,81,500	3,60,500	1,54,500	6,69,500	51,50,000
14	Nuh	60,84,000	12,87,000	24,57,000	7,02,000	2,34,000	9,36,000	1,17,00,000
15	Palwal	62,97,200	13,32,100	25,43,100	7,26,600	2,42,200	9,68,800	1,21,10,000
16	Panchkula	7,09,500	1,98,000	3,46,500	99,000	49,500	2,47,500	16,50,000
17	Panipat	52,52,000	11,11,000	21,21,000	6,06,000	2,02,000	8,08,000	1,01,00,000
18	Rewari	8,94,400	1,89,200	3,61,200	1,03,200	34,400	1,37,600	17,20,000
19	Rohtak	52,55,120	11,11,660	21,22,260	6,06,360	2,02,120	8,08,480	1,01,06,000
20	Sirsa	58,24,000	12,32,000	23,52,000	6,72,000	2,24,000	8,96,000	1,12,00,000
21	Sonipat	61,49,000	13,00,750	24,83,250	7,09,500	2,36,500	9,46,000	1,18,25,000
22	Yamunanagar	21,78,450	4,84,100	11,13,430	3,38,870	96,820	6,29,330	48,41,000
	Total	9,24,26,650	1,98,13,030	3,89,44,880	1,13,49,160	38,90,830	1,77,17,450	18,41,42,000

S. No.	District Name	Rohu	Mirgal	Catla	Grass Carp	Silver Carp	Common Carp
	Table.5. Fish Price per KG(Rs.) for the year 2018-19						
1	Ambala	125	100	120	95	100	115
2	Bhiwani	130	105	125	100	105	120
3	Charkhi Dadri	125	100	120	95	100	115
4	Faridabad	130	105	125	100	105	120
5	Fatehbad	130	105	125	100	105	120
6	Gurgaon	130	105	125	100	105	120
7	Hisar	130	105	125	100	105	120
8	Jhajjar	130	105	125	100	105	120
9	Jind	125	100	120	95	100	115
10	Kaithal	125	100	120	95	100	115
11	Karnal	125	100	120	95	100	115
12	Kurukshetra	125	100	120	95	100	115
13	Mahendergarh	125	100	120	95	100	115
14	Nuh	130	105	125	100	105	120
15	Palwal	130	105	125	100	105	120
16	Panchkula	130	105	125	100	105	120
17	Panipat	130	105	125	100	105	120
18	Rewari	125	100	120	95	100	115
19	Rohtak	130	105	125	100	105	120
20	Sirsa	130	105	125	100	105	120
21	Sonipat	130	105	125	100	105	120
22	Yamunanagar	125	100	120	95	100	115

Districts	Fish Species						All Fish Species
	Rohu	Mirgal	Catla	Grass Carp	Silver Carp	Common Carp	
Ambala	25,91,94,304.69	4,60,78,987.50	12,71,78,005.50	3,06,42,526.69	92,15,797.50	6,88,88,086.31	54,11,97,708.19
Bhiwani	95,82,30,000.00	15,47,91,000.00	36,85,50,000.00	7,37,10,000.00	3,09,58,200.00	22,99,75,200.00	1,81,62,14,400.00
Charkhi Dadri	26,83,64,545.31	5,99,13,945.00	12,58,19,284.50	2,84,59,123.88	1,49,78,486.25	8,61,26,295.94	58,36,61,680.88
Faridabad	28,37,42,550.00	4,84,79,681.25	11,01,81,093.75	2,51,84,250.00	88,14,487.50	4,02,94,800.00	51,66,96,862.50
Fatehbad	76,92,19,132.50	13,14,27,233.44	29,86,98,257.81	6,82,73,887.50	2,38,95,860.63	10,92,38,220.00	1,40,07,52,591.88
Gurgaon	20,10,41,977.50	3,43,49,627.81	7,80,67,335.94	1,78,43,962.50	62,45,386.88	2,85,50,340.00	36,60,98,630.63
Hisar	1,07,26,85,250.00	18,32,76,843.75	41,65,38,281.25	9,52,08,750.00	3,33,23,062.50	15,23,34,000.00	1,95,33,66,187.50
Jhajjar	85,12,27,650.00	14,54,39,043.75	33,05,43,281.25	7,55,52,750.00	2,64,43,462.50	12,08,84,400.00	1,55,00,90,587.50
Jind	72,99,84,937.50	12,35,35,912.50	28,30,09,545.00	6,40,14,063.75	2,24,61,075.00	10,33,20,945.00	1,32,63,26,478.75
Kaithal	41,50,02,656.25	7,06,38,750.00	17,80,09,650.00	5,36,85,450.00	1,41,27,750.00	9,74,81,475.00	82,89,45,731.25
Karnal	53,69,72,231.25	8,40,47,827.50	24,65,40,294.00	6,21,02,005.88	2,80,15,942.50	13,96,12,780.13	1,09,72,91,081.25
Kurukshetra	40,59,80,859.38	7,21,74,375.00	19,92,01,275.00	4,79,95,959.38	1,44,34,875.00	10,79,00,690.63	84,76,88,034.38
Mahendergarh	28,99,77,187.50	6,32,67,750.00	13,28,62,275.00	3,50,60,878.13	1,58,16,937.50	7,88,21,071.88	61,58,06,100.00
Nuh	80,97,04,350.00	13,83,44,456.25	31,44,19,218.75	7,18,67,250.00	2,51,53,537.50	11,49,87,600.00	1,47,44,76,412.50
Palwal	83,80,78,605.00	14,31,92,424.38	32,54,37,328.13	7,43,85,675.00	2,60,34,986.25	11,90,17,080.00	1,52,61,46,098.75
Panchkula	9,44,25,581.25	2,12,83,762.50	4,43,41,171.88	1,01,35,125.00	53,20,940.63	3,04,05,375.00	20,59,11,956.25
Panipat	69,89,75,550.00	11,94,25,556.25	27,14,21,718.75	6,20,39,250.00	2,17,13,737.50	9,92,62,800.00	1,27,28,38,612.50
Rewari	11,44,55,250.00	1,93,69,350.00	4,43,73,420.00	1,00,36,845.00	35,21,700.00	1,61,99,820.00	20,79,56,385.00
Rohtak	69,93,90,783.00	11,94,96,502.13	27,15,82,959.38	6,20,76,105.00	2,17,26,636.75	9,93,21,768.00	1,27,35,94,754.25
Sirsa	77,51,01,600.00	13,24,32,300.00	30,09,82,500.00	6,87,96,000.00	2,40,78,600.00	11,00,73,600.00	1,41,14,64,600.00
Sonipat	81,83,55,037.50	13,98,22,495.31	31,77,78,398.44	7,26,35,062.50	2,54,22,271.88	11,62,16,100.00	1,49,02,29,365.63
Yamunanagar	27,87,73,523.44	4,95,59,737.50	13,67,84,875.50	3,29,57,225.44	99,11,947.50	7,40,91,807.56	58,20,79,116.94
Total(Haryana)	**12,16,88,83,562.06**	**2,10,03,47,561.81**	**4,92,23,20,169.81**	**1,14,26,62,145.63**	**41,16,15,681.75**	**2,14,30,04,255.44**	**22,88,88,33,376.50**

Table.6: Districts-wise and individuals fish species-wise Grass Value Addition(GVA) of fisheries sector in the state of Haryana:2018-19