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Human Development Index (HDI): A Case study of Aasgaon Village, Dist- Satara, Maharashtra, India

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Abstract

The Human Development Index (HDI) is a summary composite index that measures average achievement of particular nation in three basic aspects of human development. These aspects are popularly known as (1) A long and healthy life. (2) Knowledge (3) A decent standard of living. This research paper focus on HDI of Aasgaon- a small & popular village of satara district of Maharashtra state, which is role model for rural development and self sufficiency. The village has achieved success because of its social transformation with the help & active participation of local people, especially women.

Key words: HDI, Life expectancy index, Education index, Adult literacy index, Gross enrollment index, GDP index.

1. Introduction:

As compare to developed and other developing countries of the world, even today, India is far behind in overall development. This development of various nations is measured in terms of HDI. The HDI is nothing but a summary measurement of Human development. It measures the average achievement of respective country in respect of human development. For this achievement following three basic dimensions are used.

- 1.1 A long & healthy life.
- 1.2 Knowledge.
- 1.3 A decent standard of living.

1.1 A long and healthy life:

A long and healthy life is represented in the HDI by life expectancy at birth. For calculation of Life Expectancy Index upper and lower goalpost is determined, which is age 85 for upper goalpost and age 25 for lower goalpost, which represents 1 & 0 respectively. Life expectancy index is $1/3^{\text{rd}}$ of HDI. Life expectancy index is calculated by using following formula:

$$\text{Life Expectancy Index} = \frac{\text{Actual Value} - \text{Minimum value}}{\text{Maximum value} - \text{Minimum value}}$$

1.2 Knowledge:

The knowledge is represented in the HDI by the Education Index, which is the combination of Adult Literacy rate and Gross Enrollment ratio (GER). In other words, Education Index is a measure of relative achievement in Adult Literacy and primary, secondary and tertiary gross enrollment of respective country. While calculating education index maximum goalpost is considered 100% and minimum is 0. Education Index is calculated by using following formula:

- A) **Adult literacy rate** is used to calculate Adult Literacy Index, which is calculated by using following formula:

$$\text{Adult Literacy Index: } \frac{\text{Adult Literacy Rate} - 0}{100 - 0}$$

- B) **Gross enrollment ratio (GER)** is used to calculate Gross Enrollment Index, which is calculated by using following formula:

$$\text{Gross Enrollment Index: } \frac{\text{Gross enrollment ratio} - 0}{100 - 0}$$

- C) **Education Index:** Education index is a combination of Adult Literacy index and Gross Enrollment index, in which 2/3rd weightage is given to Adult Literacy index and 1/3rd weightage is given to Gross Enrollment index. Education index is calculated by using following formula:

$$\text{Education Index: } \frac{2}{3} (\text{Adult Literacy Index}) + \frac{1}{3} (\text{Gross Enrollment Index}).$$

1.3 A Decent standard of living:

A decent standard of living is represented in HDI by GDP index. GDP index is calculated by using adjusted GDP per capita. It does not reflect in long & healthy life and knowledge but reflects in HDI with 1/3rd weightage of total GDP index calculated. While calculating GDP index maximum goalpost for GDP per capita is considered US \$ 40000 and minimum US \$ 100 is considered. GDP index is calculated by using following formula:

$$\text{GDP Index: } \frac{\text{Log (Actual GDP per capita in USD)} - \text{Log (US \$ 100)}}{\text{Log (US \$ 40000)} - \text{Log (US \$ 100)}}$$

1. So, HDI is a combination of Life Expectancy Index, Education Index & GDP Index in which 1/3rd weightage is given to each index. HDI is calculated by using following formula:

$\text{Human Development Index} = \frac{1}{3} (\text{Life Expectancy Index}) + \frac{1}{3} (\text{Adult Literacy Index}) + \frac{1}{3} (\text{GDP Index})$
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2. Study Area:

HDI is basically calculated to know the Human development of particular nation in composite term of Health, Education and Income. But in this research paper, instead of India or Maharashtra, HDI of Aasgaon- a small village from satara district of state Maharashtra, is calculated, which HDI is more satisfactory than Maharashtra & India. A village Aasgaon is located at 2 km away from village Waduth, which is located at Satara-Lonand State Highway. It is about 150 km away from Pune and about 275 km away from state capital Mumbai. It is 14 km far from Satara city and National Highway no.4.

3. Hypothesis:

3.1 The HDI of village Aasgaon is better than HDI of Maharashtra & India.

4. Methodology:

For this research paper data is collected by using primary sources like interview, observation, personal visits and secondary sources like & records available with village Gram panchayat, government offices, Journals, magazines, and information published in various newspapers.

5. Data collection:

Aasgaon is one of the deprived village of satara district of Maharashtra, which came in to existence in 1952 at Tehsil wai, displaced in 1976 due to Dhom dam construction and rehabilitated near to Waduth village on hilly and barren land, popularly known as Waduth Aasgaon with 40 households & 225 people. According the population census 2001 the village has total population of 1032 with 478 male & 554 female, at the end of year 2010, population of village reach to 1431 with 673 male, 758 female, & 284 households.

The total area of village is spread in 22.5 hectares with the waste land nature. Due to waste land the productive farm land is scattered into 14 other neighboring villages. Apart from this the village has only Aaganwadi and school up to 7th standard & no higher secondary school or junior & senior college in the village, but according to population census 2001 more than 71% adult literacy rate is achieved by village, at the end of year 2010, adult literacy rate is crossed to 75%, with the active participation of village in Adult literacy mission.

The village was also facing a problem of clean drinking water, and clinical facilities for themselves and their animals. To overcome on these barriers, the villagers come together in 1992-93 and join their hands and contributed ` 52000 for construction of water supply scheme and also worked for the same without any consideration. Today the village is self sufficient in their water requirement. In addition to this scheme the village has constructed another three water project with the capacity of 19.40 TCM, 13.40 TCM and 17.50 TCM respectively. This is thrice more than actual water requirement of villagers.

The main income source of villagers was earning from farm production. In the beginning, more than 90% of the total households were jobless & all of them were landless as work of allotting farmland was not complete (even today it is incomplete.). To overcome on this problem. They have started to work as labourer and planted various tree like mango, tamarind, clustered apple and so on. Today the village has more than 14000 trees, which gives all types fruits except apple & strawberry. The villagers started growing all types of vegetables at their own in space available round their houses (which is popularly known as "PARASBAUG"), helps to fulfill their need of food. Even today the villagers need not go to market to buy groceries. This helps to them to earn something to fulfill their basic needs. Today, more than 50% of the households are employees in various sectors. Some of them are gov't Officers, some of them are working with private companies and some of them are working abroad also.

To avoid various health problems and diseases belong to same, the villagers constructed toilets at their own. Today the village has 104 personal toilets and 26 common toilets. The primary school & Aaganwadi has their own toilets. Some toilets are connected to Gobar Gas project, which provides LPG for cooking and other purpose. Today the village has 92 Gobar Gas projects. And gram panchayat announces a cash prize of Rs. 1000/- for one who shows open defecation

The village has achieved all this success under the guidance & leadership of Shri. Bapusaheb Shinde, a son of soil, Ex-village secretary (Gramsevak) Shri. N.B. Pawar and ex-sarpanch Shri. R.S. Gurav

and specially women of the village. The people and women of the village actively participated and positively supported for this revolution. Today, every Body whether government or non-government represents women either 50% or more. The village has given opportunities to backward class people to show their skill and abilities & contribute to development of villages (The present sarpanch of village Shri. Sopan T. Kamble is a SC category person).

Due to all these efforts the village came in to focus and won different awards and prizes. The village participated & won third prize in "Sant Gadge Maharaj Village Cleanliness campaign in 2000-01", bagged third prize at District level in 2001-02 and second prize at State level in 2004-05 and also bagged "Abasaheb Khedkar Award at division level for effective implementation of family planning programme."

6. Analysis & Interpretation of data:

Village Aasgaon is a role model of development for all villages of state Maharashtra & India, where **HDI** of village is better than its District, state and country. The HDI of village is 0.641 is better than HDI of Maharashtra & India which is 0.523 & 0.547 respectively.

7. Conclusion:

Due to the active participation, ability & spirit to do something different and dedication of villagers, village became the role model of development for Maharashtra & India.

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Population of the village:

[Table 1.1: population of the village]

Year	2001						2010					
	Male		Female		Total		Male		Female		Total	
	No's	%	No's	%	Nos.	%	No's	%	No's	%	No's	%.
1	478	46.32	554	53.68	1032	100	673	47.06	758	52.93	1431	100

2. Literacy in village:

[Table 1.2: Literacy in village in %]

Year	Aasgaon			Satara			Maharashtra		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
2001	NA	NA	71.00	88.20	68.38	78.29	85.90	67.10	76.90

(NA= Not available)

3. Water requirement of village:

@ Total population × 40 liters per person/per day, so, 1431×40×365 = 2, 08, 92,600 liters.

@ **Availability of water =**

Dam water 17.50 TCM × 10, 00, 000 liters = 1, 75, 00, 000 liters.

Gaon tale 13.30 TCM × 10, 00, 000 liters = 1, 33, 00, 000 liters.

Pazar Talaw 19.40 TCM × 10, 00, 000 liters = 1, 94, 00, 000 liters.

} = 5, 02, 00, 000
Liters

4. HDI of Aasgaon village:

a) **Life Expectancy Index:** $\frac{69.06 - 25.00}{85.00 - 25.00} = 0.743$ ----- (1)

b) Education Index

b. 1 Adult Literacy Index: $\frac{71.00 - 0.00}{100.00 - 0.00} = 0.71$

b. 2 Gross Enrollment Index: $\frac{100.00 - 0}{100.00 - 0} = 1.00$ [Table 1.3]

b. 3 Education Index: $\frac{2}{3} (0.71) + \frac{1}{3} (1.00) = 0.473 + 0.333 = 0.806$ ----- (2)

c) GDP index

GDP Index: $\frac{\text{Log (US \$ 936)} - \text{Log (US \$ 100)}}{\text{Log (US \$ 40000)} - \text{Log (US \$ 100)}} = 0.373$ ----- (3)

(**Assumption:** it is assumed that GDP of Satara district is a GDP of village Aasgaon. Actual GDP of village is more than GDP of satara but actual data is not available. GDP of Satara District is ` 47009 for year 2008-09.)

d) **Human Development Index**

Human Development Index = $\frac{1}{3} (0.743) + \frac{1}{3} (0.806) + \frac{1}{3} (0.373) = 0.641$

5. **Gross enrollment of village:**

[Table 1.3: Gross Enrollment of village]

Year	School aged individuals (Age group 6 to 11)			Gross Enrollment in numbers (Age group 6 to 11)		
	Male	Female	Total	Male	Female	Total
2006-07	81	75	156	81	75	156
2007-08	79	64	143	79	64	143
2008-09	72	61	133	72	61	133
2009-10	81	65	146	81	65	146
2010-11	55	45	100	55	45	100

6. **Eyewash on village [at 2009-10]**

Particulars	No's	Particulars	No's
Establishment of Grampanchayat	1976	Population of open category	1120
Peoples in employments	147	Self help groups	08
People working on wages	573	No. of cattle's	169
BPL families	27	Railway station (Jarandeshwar)	
APL families	257	No market (weekly) for groceries	
Population of SC/ST/OBC (21.7%)	311	Science Laboratory for school	
Free access of public library to all people		Computer lab for school (6 computers)	
Parents (women) association for school		Gram Sabah - twice in month	

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