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## Sustainable Development And Rural Ho Adivasis Of Jharkhand

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### **Abstract:**

*Economists widely use the capital approach to sustainable development (SD) which is based on the notion that sustainability requires non-declining well-being over time and that this goal can be realised if a community's total productive base (stocks of capital) is maintained intact over time. Despite the multiplicity of definitions of SD, there have been various efforts to assess and monitor progress towards SD at the global, national, regional, and community level. Given the diverse methodologies designed to assess SD, the use of indicators has been the most popular approach. This paper aims to assess SD of rural Ho Adivasis (scheduled tribes) of Jharkhand, from the capital perspective using SD indicators and analyse whether the Hos are on the path towards or away from SD. A framework of four forms of capital (natural, economic, human and social) with capital-based sustainability indicators developed from a bottom-up approach is used to elicit information to assess SD of the Hos. From the survey of 400 rural households, it is observed that level of sustainability of the four capitals is in danger that they cannot provide desired well-being to the Hos. Hence, a system perspective of SD is suggested, as it is unlikely that Hos would move towards SD if sub-systems are focused in isolation. There is a great potential for strengthening social capital in order to enhance other capitals so as to provide enhanced well-being for the present and future Hos and achieve SD.*

**Key words:** Sustainable Development, Well-being, Adivasis, Capital Approach, Community Sustainability

### **1. Introduction**

While Our Common Future (WCED, 1987) articulated and popularised the concept of sustainable development (SD), it was World Summit on Sustainable Development (WSSD) at Rio in 1992 and Johannesburg in 2002 (Rio+10) which provided a great impetus for the measurement of SD. The Agenda 21 (UNDESA, 1992) – an action plan for SD adopted by 183 governments at UNCED 1992, paved the way for various efforts to interpret, monitor, assess and report progress towards SD at the global, national, regional and community level. Despite the persistent ambiguities in definitions of SD, various efforts were devoted for developing SD indicators to facilitate measuring progress towards SD. “The issue of assessing progress towards sustainability is central to facilitating action” (Devuyst & Hens, 2002). There are various definitions interpreting SD from different perspectives. Economists have widely used the capital approach to sustainability which is based on the notion that SD requires non-declining well-being over time and that this goal can be realised only if a nation's total productive base (stocks of capital) is maintained intact over time. This paper aims to measure SD of rural HoAdivasis (Hos) of Jharkhand from the capital perspective using SD indicators and analyse whether the Hos are on the path towards SD or away from it.

### **2. The Capital Approach To Sustainable Development**

Economists define SD in terms of ‘non-declining average well-being of present and future generations’ (Dasgupta, 2007a, p. 3; Pezzey, 1992, p. 323). Often the terms ‘well-being’, ‘welfare’, ‘standard of living’, and ‘quality of life’ are used interchangeably (Dasgupta, 1999). The term ‘well-being’ is used to denote the quality of life (Dasgupta, 2001) and the quality of life in an economy is thought to be determined by the way the productive assets are managed. It is these productive assets sustain the quality of life. Pearce & Atkinson (1998) define SD as a “development path that ensures non-declining per capita utility over some time horizon ... What determines the ability of a given set of humans to improve their wellbeing (utility) is the quantity and quality of capital assets available at the time” (p. 251). Economists, despite their divergence of opinion with regard to SD find a common ground in J.R. Hicks –his well-established definition of income and its close association with the concept of SD. He defined income “as the maximum value [a person] can consume during a week, and still expect to be as well off at the end of the week as he was at the beginning” (Hicks, 1946, p. 172). Although this definition primarily applies to an individual it can also be applied to the economic affairs of a nation (national income). To remain ‘well off’ means to have the same capacity to produce the same income in the next period. Thus, defined this way, income must not contain any element of capital. So in order to estimate income correctly, capital must remain intact. Any consumption that is not sustainable cannot be counted as income. For a flow of income to be sustainable, the stocks of capital need to be constant or rising over time. However, technological change and growth in population bring in complications but can be accommodated (Solow, 1986).

The capital approach borrows the concept of capital from economics, but broadens it by taking concepts / elements from physical and other social sciences that are pertinent to SD, and integrates them within a framework based on capital. In recent years there is

a tendency to define 'capital' more broadly as "resource that can generate a stream of benefits overtime" (Czesany, 2007). Accordingly, efforts to measure SD consider a variety of forms of capital in their capital approach framework. Herein we encounter the tricky issue of substitutability, i.e. to what extent different forms of capital can be substituted for each other in raising well-being. While strong sustainability rule is cautious about the consequences of any further depletion of natural capital, weak sustainability rule considers substitutability among different stocks of capital or at least until each stock reaches the 'critical' level, but maintaining the aggregate value of the total capital stock overtime (Arrow, et al., 2007). Here one also needs to consider 'diminishing returns constraints' and its impact on overall production. However, there is disagreement about the extent modern technology enables physical capital to replace natural capital and how far the issue of non-depletion of natural capital should be considered. Besides, some argue whether there is such a thing as 'critical' natural capital that cannot be substituted for by technology, and their preservation must be absolutely necessary. While it is possible that we might replace some forms of natural resources, but it is very unlikely that we may be able to replace most of the ecosystem services. There is a concern with regard to natural and social capital is that their depletion is partly irreversible. With globalisation, the number of indigenous languages and cultures are disappearing at alarming rates (loss of cultural diversity), and these depletions may have no observable impact until it is too late.

### 2.1. Sustainable Communities

The concept of SD can be defined at different scales from the most local (such as a household or a village) to the whole planet, and so cannot be limited to any particular scale. Specially after Agenda 21 (UNDESA, 1992) the concept of sustainability has inspired hundreds of local level (community-led) sustainability initiatives across the world assessing and monitoring progress towards SD which can be collectively termed as 'sustainable urban projects' or 'sustainable communities'. They often seek to "marry 'sustainability' and 'urban development' by grounding the many interpretations of sustainability in an urban setting" (Turcu, 2013, p. 697). Sustainable Seattle (1998) defines community sustainability as "long term health and vitality - cultural, economic, environmental and social" (p. 1). If these efforts are community-driven and participatory, then the sustainable community is an outcome of the collective efforts of the people of the community. Hart (1998) provides a useful definition of a sustainable community as "a community that improves and enhances its natural, social, and economic capital in ways that allow current and future inhabitants of the community to have healthy, productive and happy lives". She defines the key terms as follows:

- Sustain means to continue without lessening, to nourish, to allow to flourish;
- Develop means to improve or bring to a more advanced state;
- Community is a group of people who live and interact in a specific geographic area.

Often frameworks analysing community sustainability look at sustainability from a whole system perspective (e.g. community capital, community capacity) with the assumption that communities working holistically are more likely to be successful in building sustainable communities. The functioning of the system depends not only on the system itself, but also on the components of the system acting and interacting among themselves affecting not only one another but also the whole system itself. Hence the solution for making development sustainable lies in understanding the biophysical system in its totality (Bebatha, 2004). "The systems approach can offer a perspective more useful than other analytical approaches, because the systems view is a way of thinking in terms of connectedness, relationships, and context" (Gallop, 2003, p. 7).

In the context of a community all forms of capital (together known as community capital) on which the members of the community rely for their continued existence have a significant role in generating income and providing wellbeing. Hart (1998) points out that a community is said to be sustainable if it takes good care of all its capital in order to continually improve the quality of life of all its inhabitants now and in the future. All these forms of capitals are important to live sustainably as a community, and therefore, these need to be managed and nurtured over time. It is the dynamic interplay of these capitals and their management make a community (global, national, regional or village) move towards or away from sustainability.

### 2.2. Sustainable Development Measurement

In order to measure well-being Dasgupta (2007a) makes the distinction between (a) Constituents of well-being versus the determinants of well-being, and (b) Current well-being versus sustainable well-being. With regard to the former, he considers that "if undertaken with sufficient precision and care, either one on its own would do the job: changes in a suitable measure of either the constituents or the determinants can serve as a measure of changes in the quality of life in a society" (Dasgupta, 2001, p. 33). However, he maintains that the proper way to measure sustainable well-being is in terms of aggregate wealth (the productive base) of the community. More wealth means a higher quality of life or well-being. Therefore any policy for development is to be conceived, adopted or rejected and evaluated it should be according to whether it increases or reduces aggregate wealth. Aggregate wealth is the total value of all of the community's capital assets. "Economic development is sustainable if, relative to its population, a society's productive base does not shrink" (Dasgupta, 2007b, p. 8). Similarly, Radej (2007) proposes two ways of measurement of SD as he points out "development is considered to be sustainable either in resources (wealth) if they remain constant or rise over time, or in utility if the consumption of present generation (well-being) remains constant or rises over time" (p. 7). He suggests that it is important to measure capital because "capital not only represents power and wealth but also a generator of future wealth" (p. 7). Though it is argued that sustainability is a 'moving target' and hence measuring sustainability at any one point in time is not worth the effort (cited in Turcu, 2013), many scholars argue that it is essential to monitor progress, as people need a reality check to ensure that things are moving in the desired direction (Innes & Booher, 2000). Moreover, given the diverse tools and methodologies designed to assess progress towards sustainability, the use of indicators and indices seems to be the most popular approach.

### 2.3. Sustainable Development And Scheduled Tribes

Often discussions on SD in terms of balancing the socio-economic-environmental objectives at the macro or global level do not address sufficiently how these could be achieved at the micro ecological unit/system level. While keeping in view a broad framework of global SD, region-specific and local area specific programmes need to be designed and implemented (Salunkhe, 2003). It is only if we achieve a balance at the micro level, we could contribute to SD of the larger global system. Focus on sustainability only at the macro level could also be consciously or unconsciously at the expense of sustainability at regional or local community level. Therefore this study is an attempt to assess SD from a micro level looking at rural Ho Adivasi communities in the state of Jharkhand, India - to what extent they are on the progress towards or away from SD.

Adivasis constitute 8.6% of the Indian population (2011 census), with 90% of them living in rural areas, and more than two thirds are concentrated in central India. The state of Jharkhand has 8.4% of the total scheduled tribe population of India which constitutes 26.21% of the state's population. Jharkhand (literally means land of forests) is endowed with vast rich forests, mineral deposits and a rich floral and faunal biodiversity. Jharkhand has about 40% of India's mineral reserves – 37% of iron ore and 33% of coal deposits. In Jharkhand, almost all mineral deposits are in those tribal-dominated regions where forests and river systems are abundant. Forests constitute about 30% of total land and tribal communities depend critically on these forests for subsistence or supplementary income. So mining in these areas leads not only to the destruction of forests and but also peoples' livelihoods. This vast mineral resource base is sometimes thought that it could act as the natural launching pad for growth acceleration which could be used for financing of broad-based social development (World Bank, 2007). But the data in Table 1 reveals the contrary. The state's infrastructure facilities are far below the national averages. In this context Kanaujia (2011) has a significant point to make: "As a result of short-sighted and deficient policies and laws, mineral access is cheap

and royalties earned by the central and state exchequer are low which are seldom used to finance in situ development projects" (p. 21). This reality is rightly portrayed as "resource rich, tribal poor" paradox of the rich natural resources versus the people who inhabit these areas (Action Aid, et al., 2008).

Infrastructure measures	Jharkhand	All-India
Road length per 100 sq km	21.4 km	74.2 km
Power availability per capita	225 kwh	450 kwh
Irrigated area (%)	10.2	40
Tele-Density (%)	3.0	10

Source: Cited in World Bank (2007)

Table : 1

Table 2 depicts the poverty rates by social groups in rural Jharkhand in comparison to the whole of India. It depicts that poverty is concentrated among scheduled castes (SCs) and STs – more than 50% of them live below poverty line. Jharkhand which has 40% of the total mineral reserves in India is one of the poorest states. This shows that the riches of the state have not percolated down to a large section of its population. It can also indicate that either the productive base of these communities has depleted to such an extent that it is not able to provide sufficient income to sustain these communities or their lack of access to the productive base.

	ST	SC	OBC	Others	All
Jharkhand	54.1	57.5	40	36.9	46.2
All-India	44.7	37.1	25.8	17.5	28.1

Source: Cited in WFP and IHD (2008)

Table : 2

### 2.4. Ho Adivasis Of Jharkhand

The Ho tribe is the fourth most populous tribe of Jharkhand having a population of 7,44,850 in 2001, (10.51% of state's ST population). West Singhbhum district is the homeland of the Ho tribe with 6,71,093 (90% of the total Hos in Jharkhand). Agriculture which is primarily mono-cropping and rain-fed is the primary source of income. Therefore only for 6 months in a year they are engaged in cultivation and the other six months, they are dependent upon collection of minor forest produce and casual labour. In case of monsoon failure seeking daily wage in or outside the village, sale of fire-wood and sale of rice-beer are the first and easy options open to most of them. Those nearer to the forests heavily depend on forests where there are restrictions as many of these forests are reserved. Since a few decades forests are fast depleting and forests have ceased to be the only or main source income to many poor families. As agricultural intensification is limited due to low technology, lack of irrigation and other rural employment opportunities are absent, seasonal migration has become a survival or coping strategy among the Hos in recent years.

### 3.Capital-based Sustainability Indicator framework and Methodology

In order to capture the complex dimensions of SD of Hos, four forms of capital, viz. natural, economic, human, and social capital are considered in the capital approach framework. West Singhbhum district - the homeland for 90% of the Ho Adivasis is chosen with a sample size of 400 Ho rural Adivasi households from 20 villages of 4 rural blocks using Probability Proportional to Size (PPS)sampling method. Household is the unit of analysis. Basically the approach of this paper is bottom-up supplemented by author's own experience of living and working with the Hos. Researcher-led participatory Focus Group Discussions (FGDs) were used to identify SD indicators and the different cut-offs (thresholds) to determine what is sustainable and what is unsustainable. 32 indicators representing four capitals (8 each) are selected for measuring SD. These indicators are essentially forward looking, which describe historical trends and provide indirect information about future sustainability (Maclaren, 1996). Households were randomly chosen from the village voters' list. To elicit socio-economic profile of the sample households both quantitative and qualitative information as collected using a questionnaire comprising of both open and close ended questions. Different methods and combinations of methods were used to illicit information on each capital. Variables/indicators are standardized before they are aggregated into composite indicators. Various methodologies are found in the literature on measuring sustainability (see for example, Freudenberg, 2003; Munda, 2005; Reddy, et al., 2010; Prescott-Allen, 2001; MacKendrick & Parkins, 2004). Drawing on the strength of these techniques this paper uses scoring and rating method. In order to arrive at an aggregate scoring across households and capitals the data was ranked on a likert scale of 1 to 3, with 1 being as bad (unsustainable), 2 being average (sustainability in danger) and 3 being good (sustainable). All the indicatorscores of each capital are aggregated to assess the level of each capital for each household, and then all the capital indices are aggregated to arrive at a composite index of SD for each household. Here are the findings:

#### 3.1.Human Capital

It refers to education, skills and health of the people in a community required to enhance human labour productivity and in turn community well-being. Though sex ratio is favourable to women (51% females) they lag behind in educational indicators. Though education level in the community is growing it is a slow process.

<b>Indicators of Human Capital</b>	<b>Unsustainable (1)</b>	<b>SD in Danger (2)</b>	<b>Sustainable (3)</b>	<b>Mean Score</b>	<b>StdDev</b>
1. Nutrition	37.25 %	39.50 %	23.25 %	1.86	0.766
2. Under five Child mortality	16.50 %	0.00 %	83.50 %	2.67	0.743
3. Source of drinking water	11.75 %	0.00 %	88.25 %	2.76	0.645
4. Educational level in the household	35.50 %	58.50 %	6.00 %	1.70	0.573
5. Adult Literacy (16 and above)	26.00 %	46.25 %	27.75 %	2.02	0.734
6. Dropouts	21.00 %	0.00 %	79.00 %	2.58	0.816
7. Possession of non-agricultural skills	63.75 %	32.50 %	3.75 %	1.40	0.562
8. Livelihood diversity	20.25 %	56.50 %	23.25 %	2.03	0.660

Table : 3

In the 400 sample households, there are 45 households (11%) where none are enrolled in school. Table 3 reveals the position of the Ho Adivasi households in relation the eight indicators of human capital. Information regarding nutrition is based on the food intake by the Hos all over the district, and the cut-offs are based on the sustainability goal for nutrition that is immediately desirable. Nutrition for the community can be assessed as follows: Good - 93 households (23%), Average – 158 households (40%) and Bad -149 households (37%). There are 65 households (16%) who do not even take egg/meat once a month. In 66 households (16.5%) there was at least one child died in the last 3 years. For 12% of the households the source of the drinking water is unhygienic and can lead to regular health complaints. The highest education in 285 households (71%) is matriculation or below. A tiny minority (6%) has someone in the household who has reached graduation and above. This educational level does not speak the quality of education especially given the low teacher-student ratio and lack of infrastructure available in remote rural areas. There are 111 households (27.75%) whose 70% of the adults are literates. In 84 (21%) households there are children below 16 who are school dropouts. The status of possession of non-agricultural skills is the worst - 255 households (64%) reported to have no non-agricultural skills such as masonry, carpentry, tailoring, mechanic, electrician, etc. With regard to livelihood diversity 93 households (23%) are engaged in business (petty shop), salaried job or skilled labour besides agriculture, whereas 226 households (56.5%) are engaged in daily wage and 81 households (20%) are engaged in sale of rice-beer or sale of firewood.

#### 3.2.Economic Capital

It refers to two types of capital: (1) physical capital – those tangible assets such as infrastructure, buildings, roads, transportation, productive machinery, etc., and (2) financial capital – those liquid assets, which can directly or indirectly facilitate in the production processes and enhance community's well-being.

<b>Indicators of Economic Capital</b>	<b>Unsustainable (1)</b>	<b>SD in Danger (2)</b>	<b>Sustainable (3)</b>	<b>Mean Score</b>	<b>StdDev</b>
1. Housing	2.00 %	4.75 %	93.25 %	2.91	0.347
2. Household assets	39.00 %	43.00 %	18.00 %	1.79	0.726
3. Tractor and/ or Water Pump	96.75 %	3.00 %	0.25 %	1.04	0.197
4. Electricity connectivity	69.25 %	29.50 %	1.25 %	1.32	0.493
5. Debt	15.00 %	25.75 %	59.25 %	2.44	0.74
6. Savings	44.75 %	35.50 %	19.75 %	1.75	0.764
7. Transport (Bicycle or motor cycle)	9.50 %	68.75 %	21.75 %	2.12	0.546
8. Livestock	23.00 %	13.75 %	63.25 %	2.40	0.838

Table : 4

With regard to housing, at least mud walls with tiles are considered sustainable (93%). 37 households (9%) were only one-room houses. For household assets, if households reported owning no mobile, TV, solar, sewing machine or a computer, it was rated as unsustainable, if one was found – average, and if mobile plus one was reported then it was rated sustainable. At least 10% of the households do not possess a bicycle – a basic mode of transport required in a village, and 49% do not possess a mobile. The status on the possession of water pump, tractor and paddy husking machine speaks of the level of mechanisation of agriculture. 277 households (69%) reported that they do not have electricity connection. Since Hos are an agricultural community possession of livestock is highly desirable as it would not only be helpful in agricultural purposes but also can serve as an important shock absorber to cope in any emergency. 36% of the household do not have cows/oxen, 92% do not have buffalos, 45% do have goats/sheep, 18% do have any fowls, and surprisingly 27 households (7%) do not possess any livestock. It is revealing that 237 households (59%) do not have debts, whereas 38% have debts between Rs. 500 to 5000. The highest debt reported is Rs. 30,000. These rural folks often try to survive within the limited resources rather than indulge in borrowing. The source of debt is relatives, villagers and self-help groups, and seldom from banks. It's a poor state of affairs with regard to savings: 28% have no savings at all either in cash or kind; 50% have meagre savings between Rs.500-5000;and only 9% are rated satisfactory. Often development is also assessed in terms of access to credit facilities: 49%do not have a bank account, while 24% have a bank account but do not use it, and only 27% have an active bank account.

### 3.3.Natural Capital

It refers to all the natural resources popularly expressed as Jal, Jungle, Jameen(water, forests, land) in all its beauty, vitality and resilience, upon which the community relies for its livelihood and which provides a base for its cultural expression and identity. Natural capital has been a significant source of livelihood for Ho communities in the past.

<b>Indicators of Natural Capital</b>	<b>Unsustainable (1)</b>	<b>SD in Danger (2)</b>	<b>Sustainable (3)</b>	<b>Mean Score</b>	<b>StdDev</b>
1. Forests depletion: Difference in distance	73.25 %	25.25 %	1.50 %	1.28	0.483
2. Dependence on forests: NTFP	56.50 %	25.00 %	18.50 %	1.62	0.779
3. Dependence on Agriculture (Cereals)	22.00 %	49.50 %	28.50 %	2.06	0.709
4. Dependence on Agriculture (Pulses)	46.75 %	50.50 %	2.75 %	1.56	0.550
5. Dependence on Agriculture (Horticulture)	49.25 %	18.00 %	32.75 %	1.84	0.891
6. Land holding (Packs worth land)	17.75 %	61.50 %	20.75 %	2.03	0.621
7. Irrigation	93.25 %	5.25 %	1.50 %	1.08	0.326
8. Vulnerability preparedness	61.50 %	32.00 %	6.50 %	1.45	0.615

Table : 5

The increasing stress on natural resources from the growing population (both Adivasis and non-Adivasis) has resulted in a growing depletion of natural capital jeopardizing the livelihoods of people. Table 5 displays the natural capital depletion and its impact on the community. 38%households receive no income from non-timber forest produce (NTFP) anymore. All households have at least some land holding, but there is immense disparity. Land holding is measured in quantity of paddy the land holding can possibly produce (as almost all cannot report in terms of acres). 13% reported to have mortgaged and 7 households sold their land in the last 3 years. 35% households produced paddy only up to 500kg, and 26% produced only up to 1000kg, 11% did not produce any paddy last year but opted for non-farm livelihood options. For a vast majority who are engaged in agriculture,it does not provide sustenance for the whole year even during a normal year, and thus is not economically viable. Climate change, low agricultural productivity, poor quality of land, insufficient land holding, poor technology and lack of irrigation aresome of the

reasons. For youth agriculture does not attract as it does not yield instant cash in hand. With regard to irrigation only 6 households use water pumps whereas others totally depend on monsoon. Besides paddy, other agriculture activities could not only enhance household income generation but also provide nutritional benefits to the households. 70%, 47% and 49% households were not engaged in production of maize, pulses and vegetables respectively last year. 63% households were rated unsustainable who opted for migration or sale of beer or wood, or sale/mortgage of land in case of monsoon failure.

### 3.4. Social Capital

It refers to the networks and bonding people enjoy within a community expressed through culture, customs and traditions, and contacts with those outside the community. Three dimensions – contacts, local indigenous governance and participation, are chosen for measuring social capital.

Indicators of Social Capital	Unsustainable (1)	SD in Danger (2)	Sustainable (3)	Mean Score	StdDev
1. Satisfaction in the Indigenous self-governance	6.25 %	45.25 %	48.50 %	2.42	0.608
2. Access to welfare measures	24.25 %	75.25 %	0.50 %	1.76	0.438
3. Litigations at present	4.50 %	0.00 %	95.50 %	2.91	0.415
4. Exercise of voting rights	7.00 %	9.25 %	83.75 %	2.77	0.565
5. Participation in village meetings by adult males	8.50 %	73.50 %	18.00 %	2.10	0.507
6. Participation in village meetings by adult females	24.00 %	69.50 %	6.50 %	1.82	0.524
7. Membership in social groups (SHG, NGOs, etc.)	39.50 %	38.00 %	22.50 %	1.83	0.770
8. Connections with 5 at local level leaders	5.50 %	70.00 %	24.50 %	2.19	0.514

Table : 6

184 households (49%) expressed their satisfaction with the indigenous self-governance. With regard to access to welfare measures 39% reported that they did not make any attempt which depicts their lack of contacts or indifference due to the difficulties experienced in the past or pessimism that things will not work out in their favour. 11% did not succeed in their attempt despite bribe or delay. What is positive of the local self-governance is that 95.5% do not seem to have any litigation which means many of the conflict issues are resolved at the local level rather than taking them to courts. Of the 1275 eligible voters 71% have voter ID, and 66% voted in last election. As observed in FGDs the male and female participation has significantly improved on the one hand whereas those well-to-do households and those who out-migrate have less incentive to participate in village meetings. Panchayati raj elections held in Jharkhand in 2011 in which many women got elected to the local body institutions boosted women's morale to participate actively in the village meetings in many areas. With regard to contacts and connections - there are only 3 households in which at least someone is associated with some political party, and 61% have someone in the household who is a member of a self-help group. It was found that 5.5% have contacts only with one local leader (i.e. village headman munda), whereas 32% have contacts with 2 leaders, 38% with 3 leaders, 21% with 4 leaders and only 3.5% have contacts with 5 local level leaders.

### 3.5. Composite Indices Of Capitals And Sustainable Development

Table 7 and 8 reveal the overall performance with regard to four capitals depicting the lowest and the highest score of the households for each capital. In the scale of 3, SD score is 1.99, i.e. below the mark of sustainability is danger. It is the composite index of the four capital indices. The lowest household score is at 1.38 whereas the highest household score is 2.56. This indicates that the Hosof Jharkhand have a long way to go to achieve SD.

	Minimum	Maximum	Mean Score	StdDev
Human Capital Index	1.25	3.00	2.13	0.3793
Economic Capital Index	1.12	2.75	1.97	0.2814
Natural Capital Index	1.00	2.50	1.62	0.3116
Social Capital Index	1.50	2.88	2.23	0.2200
Sustainable Development Index	1.38	2.56	1.99	0.2188

Table : 7

Social capital gets the highest score among the four capitals, i.e. 2.23 where the lowest household score 1.50 which is better than the lowest score of other capitals. Socially cohesive groups such as Adivasis are considered to have higher social capital than other social groups. This is obvious in the possession of social capital across households, i.e. smaller percentage in the first

quartile. Even in the overall SD index almost all (except 3.2% households) come under the range of middle two quartiles. However, the impacts of globalisation, modernisation, urbanisation, communalisation and migration can be seen in the depletion of social capital in these groups. Even the development schemes are focused on individuals and families rather the community as a whole, and some elites who have greater access benefit from them, thus resulting in greater inequalities in Adivasi communities. Consequently, socio-cultural ethos and community participation have been affected.

The next best is the human capital, i.e. 2.13, where the lowest household score is 1.25. This indicates that education and health dimensions of Ho Adivasis are not sustainable and more investment is necessary. Over the years many are being educated / trained and are also becoming conscious of health issues which can be seen in Table 8 – where there are 64 households (16%) whose human capital can be thought to be coming closer to sustainable mark, whereas 31% come under the range of 1.0 to 1.9 who need a huge investment in human capital in order to be sustainable.

	Human Capital		Economic Capital		Natural Capital		Social Capital		Sustainable Development	
	House holds	%	House holds	%	House holds	%	House holds	%	House holds	%
1.0 to 1.5	32	8	25	6.2	179	44.8	1	0.2	13	3.2
1.6 to 1.9	92	23	164	41	161	40.2	42	10.6	194	48.6
2.0 to 2.5	212	53	198	49.6	60	15	335	83.7	193	48.2
2.6 to 3.0	64	16	13	3.2	0	0	22	5.5	0	0
Total	400	100	400	100	400	100	400	100	400	100

Table : 8

Economic capital is in the third position with a score of 1.97 in the scale of 3, which is even below the mark of sustainability in danger. The maximum household score 2.75 is the lowest next to natural capital. This indicates the lack of financial and physical capital which is essential for achieving SD. This is mainly due to less productive and non-viable agriculture with low technology, non-existent irrigational facilities, absent banking sector for credit facilities and lack of infrastructure in rural areas. Hence state's role in village-level and household-level asset creation or enhancing existing assets is imperative.

Natural capital is the worst of all four capitals with 1.62 score. The lowest household score 1.00 is the least of all the lowest scores of capitals. The maximum household score 2.50 which is also the least of all highest scores. There are 179 households (45%) in the first quartile which is higher than other capitals. This indicates the extent of depletion of natural capital in Ho Adivasi areas. With the low human and economic capital aggravated by the increasingly depleting social capital, the rural folks have no other option but to deplete natural resources (sell wood, for example) for survival.

#### 4. Conclusion

The overall productive base (stocks of capitals) of the Ho communities at present does not provide adequate well-being to the Ho Adivasis. Moreover, since the indicators not only describe the present trends but also provide indirect information about future sustainability, and it is unlikely that this weak productive base can support well-being of the future generations of Ho Adivasis. Among the four capitals it appears that natural capital is the highest priority for any policy decision in favour of SD of the Hos in West Singhbhum District of Jharkhand. However, economic and human capitals need similar attention as their sustainability is also in danger. In this context a whole system perspective of SD is imperative, as it is unlikely that Ho communities would move towards SD if sub-systems are focused in isolation. Hence the solution to enhance natural capital does not lie in curtailing the use of natural resources by the Adivasis so as to prevent its further depletion, but in investing in human and economic capital and thus by strengthening these capitals the Hos do not have to depend on depleting natural resources for their survival. Since Adivasis are a homogenous group, there is a great potential for strengthening social capital for the enhancement of other capitals in achieving SD. Communities with higher social capital are likely to facilitate better the process of SD and work towards their community well-being. Here the role of the state and committed NGOs is significant. Thus all the four capitals (productive capacity) are enhanced so that they can continue to provide enhanced well-being for the present and future Ho Adivasis of Jharkhand and achieve sustainable development.

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