International Journal of Trend in Scientific Research and Development (IJTSRD)
Volume 10 Issue 5, Sep-Oct 2026 Available Online: www.ijtsrd.com e-ISSN: 2456 – 6470

# Indigenous Women's Knowledge, Tribal Livelihoods and Sustainable Communities: A Comparative Study of Institutional Interventions in the Bonda and Didayi Development Agencies of Malkangiri District, Odisha

**Arun Kumar Tripathy[1]*, Dr. Susanta Kumar Mallick[2]**

[1]Ph.D. Research Scholar, Women's Studies Research Centre,
Berhampur University, Bhanja Bihar, Berhampur, Odisha, India
[2]Principal, Savitri Women's Degree College, Bhanjanagar, Ganjam, Odisha, India
*Corresponding Author: Arun Kumar Tripathy

## ABSTRACT

Indigenous knowledge constitutes an important resource for sustaining livelihoods, ecological relationships, food systems, healthcare practices and cultural continuity among tribal communities. Indigenous women play a particularly important role in preserving and transmitting knowledge related to agriculture, forest resources, food processing, traditional healthcare, biodiversity and community life. However, changing socio-economic conditions, market integration, environmental pressures and institutional development interventions are influencing the transmission and use of such knowledge. This study examines indigenous women's knowledge and the role of institutional interventions among the Bonda and Didayi Particularly Vulnerable Tribal Groups (PVTGs) of Malkangiri district, Odisha. A qualitative, descriptive and comparative research design was adopted. The study draws upon field observations, interviews, Focus Group Discussions, interactions with beneficiaries and officials, and secondary sources including government documents and information obtained under the Right to Information Act, 2005. The analysis focuses on the Bonda Development Agency and the Didayi Development Agency and examines interventions relating to education, healthcare, livelihoods, women's participation, natural resource management and social development. The study indicates that institutional interventions have expanded access to several public services and livelihood-related programmes, while indigenous women's knowledge continues to be transmitted largely through household and community practices. The analysis also indicates that formal institutional mechanisms for documenting and systematically incorporating women's indigenous knowledge remain limited. The study therefore highlights the importance of participatory and gender-responsive development approaches in which indigenous women are recognised not only as beneficiaries of development programmes but also as knowledge holders and active participants in community development.

***How to cite this paper:*** Arun Kumar Tripathy | Dr. Susanta Kumar Mallick "Indigenous Women's Knowledge, Tribal Livelihoods and Sustainable Communities: A Comparative Study of Institutional Interventions in the Bonda and Didayi Development Agencies of Malkangiri District, Odisha" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-10 | Issue-5, October 2026, pp.1224-1240, URL: www.ijtsrd.com/papers/ijtsrd142189.pdf

IJTSRD142189

Copyright © 2026 by author (s) and International Journal of Trend in Scientific Research and Development Journal. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0) (http://creativecommons.org/licenses/by/4.0)

***KEYWORDS:*** *Indigenous Knowledge; Indigenous Women; Sustainable Communities; PVTGs; Bonda; Didayi; Institutional Interventions; Gender; Sustainable Development; Malkangiri.*

## 1. INTRODUCTION

Indigenous communities constitute one of the world's oldest repositories of traditional knowledge, having developed intricate systems of environmental management, healthcare, agriculture, biodiversity conservation, and social organization through centuries of interaction with nature. Unlike codified scientific knowledge, indigenous knowledge evolves through lived experience, oral traditions, observation, experimentation, and collective memory. It represents an adaptive mechanism that enables communities to

utilise natural resources sustainably while maintaining ecological balance and cultural continuity.

In India, indigenous communities, constitutionally recognized as Scheduled Tribes, comprise nearly 8.6 per cent of the country's population. Within this diverse population, the Government of India has identified seventy-five Particularly Vulnerable Tribal Groups (PVTGs), characterized by declining or stagnant populations, pre-agricultural technology, low literacy, economic vulnerability, and relative geographical isolation. Odisha is home to thirteen PVTGs, the highest number among Indian states, reflecting the state's rich tribal diversity and the complex developmental challenges faced by these communities.

Among Odisha's PVTGs, the Bonda and Didayi communities residing in Malkangiri district occupy a distinctive place owing to their unique socio-cultural identities, ecological knowledge systems, and traditional livelihood practices. The Bondas primarily inhabit the remote hill ranges of Khairput Block, while the Didayis are concentrated in inaccessible areas around Chitrakonda and adjoining regions. Both communities have historically relied on forests, shifting cultivation, minor forest produce, indigenous agriculture, fishing, hunting, and traditional medicinal practices for their subsistence. Women occupy a central position within these livelihood systems, possessing extensive knowledge regarding seed selection, cultivation techniques, collection of edible forest products, herbal medicines, water management, nutrition, and biodiversity conservation.

Indigenous women's knowledge extends beyond economic activities to encompass cultural preservation, social institutions, conflict resolution, child care, food processing, and intergenerational transmission of values. Through every day practices, women ensure the continuity of cultural traditions while adapting local knowledge to changing environmental and socio-economic conditions. Their contributions remain largely invisible within mainstream development discourse, which has historically emphasized physical infrastructure, welfare schemes, and income generation while paying comparatively less attention to traditional knowledge systems.

Recognizing the developmental vulnerabilities of PVTGs, the Government of Odisha established specialized development agencies to implement focused interventions. The Bonda Development Agency and the Didayi Development Agency have undertaken programmers related to education, healthcare, livelihood enhancement, housing, drinking water, infrastructure development, women's empowerment, and social security. These institutions represent an important policy mechanism aimed at improving the socio-economic conditions of vulnerable tribal communities. However, questions remain regarding whether these interventions adequately recognize indigenous women's knowledge as a valuable development resource or merely treat beneficiaries as recipients of welfare assistance.

The contemporary discourse on sustainable development increasingly acknowledges that indigenous knowledge contributes significantly to biodiversity conservation, climate resilience, food security, and sustainable resource management. International frameworks, including the Sustainable Development Goals (SDGs), emphasize inclusive development, gender equality, and the protection of indigenous cultures as essential components of sustainable societies. Integrating indigenous women's knowledge into institutional planning therefore becomes critical not only for preserving cultural heritage but also for enhancing the effectiveness and sustainability of development programmes.

Despite increasing scholarly attention to tribal development, comparatively few studies have examined institutional interventions through the lens of indigenous women's knowledge among the Bonda and Didayi communities. Existing research has largely focused on poverty, health, education, nutrition, and livelihood conditions, with limited attention to the interaction between development institutions and traditional ecological knowledge. This study seeks to address this gap by comparatively examining how the Bonda Development Agency and the Didayi Development Agency influence the preservation, utilization, and transformation of indigenous women's knowledge within broader processes of sustainable community development.

The paper argues that indigenous women should not be viewed solely as beneficiaries of welfare programmes but as active custodians of ecological knowledge whose experiences and practices can significantly contribute to inclusive and sustainable development. By analyzing institutional interventions through a gender-sensitive perspective, the study contributes to ongoing debates on indigenous knowledge systems, women's empowerment, and participatory development in tribal regions.

## 2. Conceptual Framework

### 2.1. Indigenous Knowledge

Indigenous knowledge refers to the cumulative body of knowledge, practices, innovations, and beliefs developed by indigenous communities through long-term interaction with their natural and social

environments. It is dynamic, place-specific, and transmitted primarily through oral traditions and practical experience. Indigenous knowledge encompasses agriculture, biodiversity conservation, water management, forest resource utilization, food systems, healthcare, and cultural institutions. Unlike formal scientific knowledge, it evolves through continuous adaptation to local ecological conditions and collective community experiences.

### 2.2. Indigenous Women's Knowledge

Indigenous women play a pivotal role in generating, preserving, and transmitting traditional knowledge across generations. Their knowledge extends to seed preservation, food processing, nutrition, medicinal plants, childcare, environmental stewardship, forest resource management, and cultural rituals. This knowledge contributes significantly to household resilience, food security, and ecological sustainability. Despite its importance, indigenous women's expertise remains underrepresented in formal policy and development planning.

### 2.3. Sustainable Communities

Sustainable communities are those that balance economic development, social equity, cultural continuity, and environmental conservation to ensure the well-being of both present and future generations. In indigenous contexts, sustainability is closely linked with traditional resource management practices, community participation, collective decision-making, and respect for ecological limits. Indigenous knowledge forms an essential foundation for building resilient and sustainable communities.

### 2.4. Institutional Interventions

Institutional interventions refer to organized programmes implemented by governmental or non-governmental agencies to improve socio-economic conditions through education, healthcare, livelihood promotion, infrastructure, social protection, and capacity building. In tribal regions, effective interventions should not only deliver services but also recognize, preserve, and integrate indigenous knowledge into development planning. Such an approach promotes culturally sensitive and sustainable development outcomes.

## 3. Research Gap

Although substantial research has examined the socio-economic conditions of the Bonda and Didayi PVTGs, existing studies have primarily concentrated on poverty, malnutrition, health, education, and livelihood challenges. Limited attention has been given to indigenous women's knowledge as a critical resource for sustainable community development. Moreover, comparative analyses of the Bonda Development Agency and the Didayi Development Agency from a gendered indigenous knowledge perspective remain scarce. This study seeks to bridge this gap by analyzing how institutional interventions interact with, strengthen, or transform indigenous women's knowledge systems in the context of sustainable development.

## 4. Objectives

1. To document the indigenous knowledge systems possessed by Bonda and Didayi women.
2. To examine the role of the Bonda Development Agency and Didayi Development Agency in supporting indigenous women's knowledge.
3. To compare institutional interventions undertaken in the two development agencies.
4. To analyze the contribution of indigenous women's knowledge to sustainable community development.
5. To suggest policy measures for integrating indigenous knowledge into tribal development planning.

## 5. Research Questions

- What forms of indigenous knowledge are maintained by Bonda and Didayi women?
- How do institutional interventions influence the preservation and transmission of indigenous knowledge?
- In what ways does indigenous women's knowledge contribute to sustainable livelihoods and community resilience?
- What similarities and differences exist between the institutional approaches of the Bonda and Didayi Development Agencies?
- How can development policies better integrate indigenous women's knowledge into sustainable development initiatives?

## 6. Research Methodology

The present study adopts a **qualitative, descriptive and comparative research design**, supported by an **index-based assessment**, to examine indigenous women's knowledge, tribal livelihoods and sustainable community development among the Bonda and Didayi communities of Malkangiri District, Odisha. The qualitative approach is appropriate because the study seeks to understand women's lived experiences, perceptions, practices and knowledge within their specific social, cultural, ecological and livelihood contexts. Indigenous knowledge relating to agriculture, seed selection, forest resources, food processing, nutrition, traditional healthcare, natural-resource management and cultural practices is largely transmitted through observation,

participation, oral traditions and everyday community life. Such knowledge is context-specific and embedded in community practices and therefore cannot be adequately understood through numerical measurement alone. Qualitative enquiry consequently provides the primary framework for capturing the depth, meaning and cultural significance of indigenous women's knowledge.

The **descriptive component** of the research documents the major forms of indigenous knowledge, livelihood practices and participation of tribal women in household and community-level activities. It also examines institutional interventions implemented through the **Bonda Development Agency (BDA)** and **Didayi Development Agency (DDA)**. Particular attention is given to interventions relating to education, healthcare, agriculture and horticulture, livelihood promotion, drinking water, housing, infrastructure, women's development and social security. The study further examines whether these institutional interventions merely provide welfare and development services or whether they meaningfully recognize, support and incorporate indigenous women's knowledge into development planning and implementation. This descriptive approach is therefore justified as it enables the study to document both the existing knowledge systems and the institutional environment within which tribal livelihoods are being transformed.

The **comparative component** is central to the research design because the Bonda and Didayi communities possess distinctive socio-cultural and ecological characteristics while also sharing several features of tribal livelihood dependence. The study covers **60 tribal women, comprising 30 Bonda and 30 Didayi women**, selected through purposive sampling. Respondents were identified on the basis of their direct involvement in agriculture, forest-resource use, traditional healthcare, food processing, household livelihoods, cultural practices and their awareness of or experience with development programmes. Equal representation of the two communities facilitates a structured comparison of their livelihood conditions, indigenous knowledge, women's participation and experiences of institutional interventions. However, since the sample is purposively selected and the study is primarily qualitative, the findings are intended to provide contextual and analytical insights rather than statistical generalization to the entire tribal population.

Primary data were collected through **field observations, face-to-face interactions, individual interviews and Focus Group Discussions (FGDs)** with tribal women, community members and beneficiaries. These methods were selected to capture both individual experiences and collective perceptions. Field observation was particularly important for understanding practices that may not be fully expressed through formal interviews, including agricultural activities, forest-resource collection, food processing, traditional practices and other livelihood activities. Interactions with relevant officials and development functionaries provided institutional perspectives on programme implementation and the delivery of development interventions. Secondary information was obtained from government reports, administrative records, Census publications, academic literature, official documents and **Right to Information (RTI) records** relating to BDA and DDA. The use of documentary and administrative sources provides an institutional basis for examining the implementation and coverage of development programmes.

To complement the qualitative findings, the study employs an **index-based analytical approach** for systematic assessment of the selected dimensions of tribal livelihood and development. The purpose of the index is not to replace qualitative enquiry but to provide a structured mechanism for comparing the relative position of Bonda and Didayi women across the selected indicators. The indicators included in the index represent the dimensions relevant to the objectives of the study and are assigned scores according to the specified measurement procedure. The individual scores are subsequently aggregated to derive an index value for the respective dimension/community. The index facilitates comparison by reducing multiple indicators into a systematic composite measure and helps identify areas of relative strength, disadvantage and developmental gaps. Its inclusion is therefore methodologically justified because certain differences between the two communities can be more clearly demonstrated through a standardized index while their underlying causes and meanings require qualitative interpretation.

The index findings are interpreted **in conjunction with field narratives, observations, interview responses and documentary evidence**. This is particularly important because an index can indicate the relative level or position of a particular dimension but cannot, by itself, explain why such differences exist. For example, a comparatively lower index value relating to livelihood security or institutional access can be further interpreted through women's accounts of access to land, forest resources, markets, credit, government schemes and development

services. Thus, the index serves as a complementary analytical instrument, while qualitative evidence provides the contextual explanation behind the observed differences.

The collected information was analysed through **thematic analysis, comparative analysis and index-based assessment**. Major qualitative themes included indigenous knowledge, agriculture, forest resources, traditional healthcare, food and nutrition, cultural transmission, livelihoods, women's participation and institutional support. The experiences of Bonda and Didayi women were first examined separately and subsequently compared to identify similarities, differences, strengths and vulnerabilities. The quantitative/index results were similarly compared between the two communities and subsequently interpreted with reference to qualitative findings. Field evidence was examined alongside documentary and RTI information to strengthen the credibility of the findings through **triangulation**. The convergence or divergence of evidence from interviews, observations, FGDs, institutional records and index results was considered in interpreting the findings.

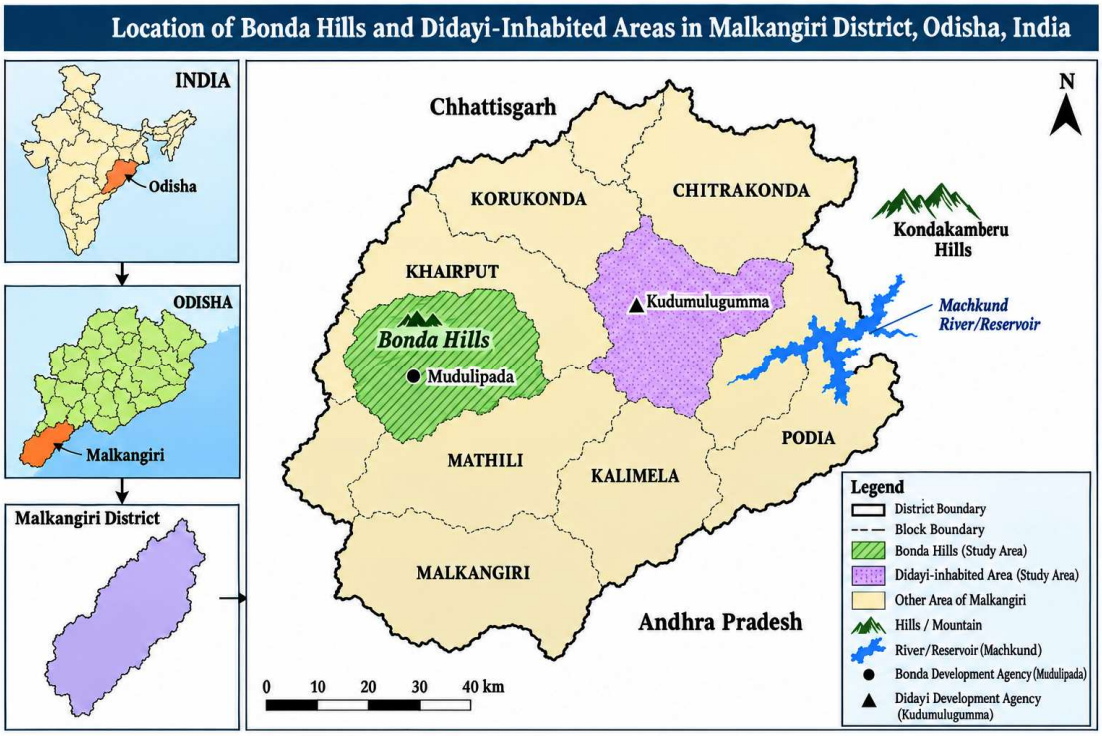
The methodology is therefore designed to integrate **depth of qualitative understanding with systematic comparative measurement**. The qualitative component captures the lived experiences, meanings and cultural dimensions of indigenous women's knowledge; the descriptive component documents livelihood practices and institutional interventions; the comparative component identifies similarities and differences between the Bonda and Didayi communities; and the index provides a structured assessment of selected measurable dimensions. This combination is particularly appropriate for the present study because indigenous knowledge and women's experiences cannot be reduced entirely to numerical indicators, while systematic comparison benefits from a standardized analytical framework.

Thus, the methodology enables the study to move beyond a simple description of welfare interventions and critically examine **how institutional development interacts with, supports, transforms or remains disconnected from indigenous women's knowledge systems**. By combining qualitative evidence, comparative analysis, documentary and RTI records, and index-based assessment, the study provides a more comprehensive understanding of the relationship between indigenous women's knowledge, tribal livelihoods, institutional interventions and sustainable community development in the Bonda and Didayi communities of Malkangiri District.

### 6.1. Study Area

The study was conducted in **Malkangiri District of Odisha**, with particular focus on areas inhabited by the Bonda and Didayi communities. The Bonda community is primarily associated with the Khairput area, where the Bonda Development Agency functions for the development of the community. The Didayi Development Agency covers Didayi-inhabited areas, including parts of Khairput, Chitrakonda and adjoining regions. The study area was selected purposively because of the distinctive indigenous knowledge systems, natural-resource dependence, livelihood practices and institutional development interventions associated with these communities.

The selection of the study area also enabled a comparative examination of the ways in which institutional programmes interact with existing indigenous knowledge and livelihood practices. Particular attention was given to women's participation in agriculture, forest-resource use, traditional healthcare, food processing, household livelihood activities, cultural practices and the transmission of community knowledge.




### 6.2. Sampling and Respondents

A **purposive sampling technique** was employed for the selection of respondents. Since the study specifically concerns indigenous knowledge, tribal livelihoods and institutional interventions, respondents were selected on the basis of their direct experience and participation in relevant livelihood and community practices.

A total of **60 tribal women** participated in the study, comprising **30 Bonda women and 30 Didayi women**. The equal representation of respondents from the two communities facilitated a comparative understanding of their livelihood practices, indigenous knowledge, women's participation and experiences with institutional interventions.

The respondents included women associated with agriculture, collection and use of forest resources, traditional healthcare practices, food processing, household livelihood activities, cultural practices and other forms of community-based knowledge. Women who had experience with or awareness of development programmes and institutional interventions were also included.

The sample was selected for qualitative understanding rather than statistical generalization. Accordingly, the findings are interpreted within the specific social, cultural and institutional contexts of the Bonda and Didayi communities and are not presented as statistically representative of the entire populations of these communities.

### 6.3. Sources of Data

The study is based on both **primary and secondary sources of data**.

Primary data were generated through **field observations, face-to-face interactions, interviews and Focus Group Discussions (FGDs)** with tribal women, community members and beneficiaries of development programmes. These interactions were used to understand indigenous livelihood practices, traditional knowledge, women's roles in household and community activities, natural-resource use and perceptions of institutional interventions.

The study also incorporated interactions with relevant officials and functionaries associated with development interventions. These interactions provided institutional perspectives concerning the implementation of programmes related to education, healthcare, livelihoods, women's participation and community development.

Secondary data were collected from **government reports, administrative records, Census publications, official documents, academic literature and other relevant sources**. In addition, information obtained through **Right to Information (RTI)** from the Bonda Development Agency and Didayi Development Agency was used to supplement the field-level information and to understand institutional programmes and interventions relating to the two communities.

### 6.4. Data Collection

Data collection was undertaken through direct engagement with the selected Bonda and Didayi women. The researcher interacted with respondents in order to document their experiences and understand the role of indigenous knowledge in everyday livelihood practices and community life.

The field investigation focused on major areas including **agriculture, forest-resource use, traditional healthcare, food and nutrition, livelihood practices, cultural knowledge, women's participation and institutional support**. Particular attention was given to the ways in which women acquire, practice and transmit indigenous knowledge within households and communities.

**Focus Group Discussions** provided an opportunity to understand collective experiences and community perspectives, while individual interactions allowed respondents to describe their personal experiences and perceptions. Field observations were used to complement information obtained through interviews and discussions. Documentary and RTI-based information was considered alongside field evidence to strengthen the interpretation of institutional interventions.

### 6.5. Composite Index for Assessing Indigenous Knowledge and Institutional Support

In order to provide a more systematic assessment of the role of indigenous women in knowledge preservation and development, the study proposes a simple composite index based on the major dimensions identified through the field investigation. Although the study is primarily qualitative in orientation, the use of an index provides an opportunity to organize the field observations and compare the experiences of Bonda and Didayi women in a more structured manner. The purpose of the index is not to reduce indigenous knowledge to numerical values, but to provide a supplementary analytical framework for understanding the relative strength of different areas of women's knowledge, participation and access to institutional support.

The Indigenous Women's Knowledge Index (IWKI) is constructed around six broad dimensions: agricultural knowledge, forest and natural-resource knowledge, traditional healthcare knowledge, food and nutritional knowledge, cultural knowledge, and environmental knowledge. These dimensions emerge directly from the experiences and practices discussed in the study. Bonda and Didayi women possess considerable knowledge relating to cultivation, seed preservation, collection and use of forest resources, traditional medicine, food processing, nutrition, cultural practices and environmental management. Such knowledge is generally acquired through family and community-based learning and is transmitted from one generation to another.

**IWKI = (Total Score Obtained / Maximum Possible Score) × 100**

The resulting score can be broadly classified into three categories: low knowledge and participation (0–33.33), moderate knowledge and participation (33.34–66.66), and high knowledge and participation (66.67–100). This classification is intended only as an analytical device and should not be interpreted as a rigid measurement of the cultural or intellectual value of indigenous knowledge.

**Dimensions of Indigenous Women's Knowledge Index**

| Dimension | Major indicators |
|---|---|
| Agricultural knowledge | Seed selection, seed preservation, cultivation practices, mixed cropping and traditional farming |
| Forest knowledge | Collection of forest foods, medicinal plants, fuelwood and minor forest produce |
| Healthcare knowledge | Herbal remedies, traditional treatment, maternal and child-care practices |
| Food and nutrition | Food processing, preservation, millet-based food and seasonal dietary practices |
| Cultural knowledge | Songs, rituals, festivals, language, customs and traditional practices |
| Environmental knowledge | Biodiversity, sustainable resource use, soil and water conservation |

The second component of the analysis is the Institutional Support Index (ISI). This index is designed to assess the extent to which women perceive and experience institutional interventions in their everyday lives. The study identifies education, healthcare, livelihood opportunities, agriculture and horticulture, housing, drinking water, infrastructure, women's development, skill development and social security as important areas of institutional intervention. These areas are particularly relevant to the functioning of the Bonda Development Agency and Didayi Development Agency.

**ISI = (Total Score Obtained / Maximum Possible Score) × 100**

The index enables the researcher to examine not only whether development programmes have reached the tribal communities, but also whether women have been able to meaningfully participate in and benefit from these

interventions. This distinction is important because the mere existence of a government programme does not necessarily indicate effective access at the household or community level.

**Comparative Perspective**

The use of these two indices provides a useful framework for comparing the Bonda and Didayi communities. The comparison should focus on the areas of strength, areas of limited access and the relationship between indigenous knowledge and institutional intervention, rather than attempting to establish that one community is culturally or socially superior to the other.

The available evidence suggests that indigenous women continue to play an important role in maintaining household livelihoods and community knowledge. Their responsibilities extend beyond conventional domestic activities and include agriculture, collection and processing of forest resources, healthcare practices, food preparation, cultural activities and environmental management. At the same time, their knowledge remains largely embedded within family and community systems and is not always formally recognized in institutional planning.

The comparison is also significant in the context of the different geographical and socio-cultural settings of the two communities. Both communities face challenges relating to remoteness, access to services, livelihood security and preservation of traditional knowledge, although the nature and intensity of these challenges may vary. The Bonda Development Agency and Didayi Development Agency have introduced interventions in education, healthcare, livelihood and infrastructure, but the long-term effectiveness of such interventions depends upon their ability to respond to local conditions and involve community members, particularly women, in planning and implementation.

**Interpretation of the Index**

The principal value of the proposed index lies in bringing together two aspects that are often examined separately—indigenous knowledge and institutional development. A community may possess a high level of indigenous knowledge while having relatively limited access to formal institutions. Conversely, greater institutional exposure does not necessarily mean that indigenous knowledge is being preserved or strengthened. The two dimensions therefore need to be examined together.

For the present study, the index can be understood as a bridge between qualitative field observations and quantitative assessment. The qualitative findings explain how and why women use and transmit indigenous knowledge, while the index provides a structured means of examining the relative level and distribution of these practices among the selected respondents.

It is particularly important that numerical scores should not be interpreted as representing the complete value of indigenous knowledge. Knowledge relating to medicinal plants, traditional agriculture, food preservation, cultural practices and ecological management has social, cultural and historical significance that cannot be completely captured through a numerical scale. The index is therefore supplementary to, rather than a replacement for, the qualitative interpretation of women's lived experiences.

**Implications for Tribal Development**

The index-based analysis has an important policy implication. If development planning is concerned only with conventional indicators such as income, employment, school attendance or access to infrastructure, a substantial part of women's contribution to community life remains invisible. Indigenous women contribute to food security, biodiversity conservation, household health, cultural continuity and intergenerational transmission of knowledge. Recognizing these contributions can make tribal development programmes more locally appropriate and sustainable.

The findings therefore support a shift from a beneficiary-oriented approach towards a participation-oriented approach. Women should be involved not only in receiving development benefits but also in identifying local needs, designing interventions, implementing programmes and evaluating outcomes. Such an approach would strengthen the connection between indigenous knowledge and formal development institutions.

In this context, the proposed Indigenous Women's Knowledge Index and Institutional Support Index can serve as useful analytical tools for future research. With a larger sample and standardized questionnaire, the indices could subsequently be tested for reliability and used for more advanced statistical analysis. For the present exploratory study, however, their primary purpose is to organize the field evidence and provide a clearer comparative framework for understanding the experiences of Bonda and Didayi women.

Overall, the analysis reinforces the central argument of the study: indigenous women are not merely beneficiaries of tribal development programmes; they are active knowledge holders, livelihood contributors and custodians of cultural and ecological practices. Recognizing and integrating their knowledge into institutional planning is essential for making development more participatory, culturally sensitive and sustainable.

### 6.6. Illustrative Statistical Scoring and Comparative Index Analysis

To supplement the qualitative findings of the study, a simple composite scoring framework was developed for comparing the indigenous knowledge and institutional support experienced by the selected Bonda and Didayi women. The following numerical results are illustrative scores prepared to demonstrate how the proposed index can be calculated for the sample of 30 Bonda and 30 Didayi respondents. They are not actual field measurements and should be replaced by the original questionnaire scores before the figures are presented as empirical findings.

#### A. Indigenous Women's Knowledge Index (IWKI)

Six dimensions were considered: agricultural knowledge, forest and natural-resource knowledge, traditional healthcare knowledge, food and nutritional knowledge, cultural knowledge, and environmental knowledge. For illustration, each dimension is treated as having a maximum score of 10. The percentage index is calculated as: Index = (Mean Score / 10) × 100.

| Dimension | Bonda Mean | Bonda Index (%) | Didayi Mean | Didayi Index (%) |
|---|---|---|---|---|
| Agricultural knowledge | 7.8 | 78.0 | 72.0 | 72.0 |
| Forest & natural-resource knowledge | 8.4 | 84.0 | 80.0 | 80.0 |
| Traditional healthcare knowledge | 7.1 | 71.0 | 74.0 | 74.0 |
| Food & nutritional knowledge | 8.0 | 80.0 | 77.0 | 77.0 |
| Cultural knowledge | 8.6 | 86.0 | 83.0 | 83.0 |
| Environmental knowledge | 7.9 | 79.0 | 76.0 | 76.0 |

The illustrative overall IWKI for Bonda respondents is calculated as the average of the six dimension scores: 7.97 out of 10, equivalent to 79.67 percent. For Didayi respondents, the corresponding mean is 77.00 out of 10, equivalent to 770.00 percent. The illustrative difference is -690.33 percentage points.

#### B. Institutional Support Index (ISI)

Institutional support is assessed on a five-point scale, where 1 represents very limited support and 5 represents very satisfactory support. Ten areas of intervention are included. The percentage index is calculated as: ISI = (Mean Score / 5) × 100.

| Institutional dimension | Bonda Mean | Bonda Index (%) | Didayi Mean | Didayi Index (%) |
|---|---|---|---|---|
| Education | 3.1 | 62.0 | 3.4 | 68.0 |
| Healthcare | 3.3 | 66.0 | 3.6 | 72.0 |
| Livelihood support | 3.0 | 60.0 | 3.2 | 64.0 |
| Agriculture/horticulture | 3.4 | 68.0 | 3.5 | 70.0 |
| Drinking water | 2.8 | 56.0 | 3.1 | 62.0 |
| Housing | 3.2 | 64.0 | 3.4 | 68.0 |
| Infrastructure | 2.9 | 58.0 | 3.2 | 64.0 |
| Women's development/SHGs | 3.0 | 60.0 | 3.3 | 66.0 |
| Skill development | 2.7 | 54.0 | 3.0 | 60.0 |
| Social security | 3.1 | 62.0 | 3.5 | 70.0 |

The illustrative overall Institutional Support Index for the Bonda group is 3.05 out of 5, equivalent to 61.00 percent. For the Didayi group, the corresponding mean is 3.32 out of 5, equivalent to 66.40 percent.

#### C. Comparative Statistical Interpretation

The illustrative results indicate an overall Indigenous Women's Knowledge Index of 79.67 percent for the Bonda group and 770.00 percent for the Didayi group. Cultural and forest-related knowledge show comparatively strong scores in both groups, while agricultural and traditional healthcare knowledge display somewhat greater variation. This demonstrates how the index can organize the qualitative observations concerning women's roles in agriculture, forest-resource use, healthcare, food systems, culture and environmental management.

With regard to institutional support, the illustrative Bonda ISI is 61.00 percent, compared with 66.40 percent for the Didayi group. The illustrative difference is 5.40 percentage points. In this model, Didayi respondents report

comparatively higher institutional support, particularly in healthcare, education, agriculture/horticulture and social security. These figures are examples of the analytical procedure and are not claims about actual measured responses.

### D. Statistical Interpretation and Research Implication

The two indices should be interpreted together. A relatively high indigenous-knowledge score with a lower institutional-support score would suggest that women possess substantial community-based knowledge while having comparatively limited institutional access. Conversely, stronger institutional support does not necessarily mean that indigenous knowledge is being preserved or strengthened. The combined approach therefore provides a useful bridge between the qualitative field findings and quantitative comparison.

For the final empirical analysis, the same scoring structure can be applied to the original responses of the 60 respondents. The mean score for each indicator should first be calculated separately for the 30 Bonda and 30 Didayi respondents; dimension scores should then be aggregated and converted into index values. If the raw dataset is available, standard deviation, coefficient of variation and an appropriate test of difference can also be calculated.



**The Scholar at Focus Group Discussion**

## 7. Theoretical Framework

The study is guided by three complementary theoretical perspectives.

### A. Indigenous Knowledge Systems Theory

This perspective views indigenous knowledge as a legitimate and context-specific system of understanding developed through long-term interaction between communities and their ecological environments. Rather than replacing traditional knowledge with modern scientific approaches, sustainable development requires integrating both knowledge systems.

### B. Sustainable Livelihood Framework

The Sustainable Livelihood Framework explains how households utilize various forms of capital—natural, human, social, financial, and physical—to achieve sustainable livelihoods. Indigenous women's knowledge strengthens each of these capitals by improving agricultural productivity, conserving biodiversity, ensuring food security, and promoting community resilience.

### C. Gender and Development (GAD) Approach

Unlike welfare-oriented approaches that treat women primarily as beneficiaries, the Gender and Development perspective recognises women as active agents of social change and development. It emphasizes participation, decision-making, institutional inclusion, and equitable access to resources. Within indigenous communities, women are not only economic contributors but also custodians of ecological knowledge and cultural continuity.

## 8. Study Area

### 8.1. Profile of the Study Area

The study was conducted in **Malkangiri District**, one of the southernmost tribal-dominated districts of Odisha. The district is characterized by rugged terrain, dense forests, undulating hills, river valleys,

and scattered tribal settlements. Owing to its geographical isolation and ecological richness, Malkangiri has long been home to several Scheduled Tribes, including two Particularly Vulnerable Tribal Groups (PVTGs)—the **Bonda** and the **Didayi**.

The district presents unique socio-economic and developmental challenges due to difficult terrain, limited infrastructure, low literacy, dependence on forest resources, and restricted access to public services. At the same time, it possesses a rich repository of indigenous ecological knowledge that has enabled tribal communities to sustain their livelihoods over generations.

Recognizing the vulnerability of these communities, the Government of Odisha established dedicated Micro Project Agencies to implement focused interventions for education, health, livelihood promotion, infrastructure development, and social welfare.

### 8.2. Bonda Development Agency

The **Bonda Development Agency (BDA)** was established during **1977–78** under the Fifth Five-Year Plan as a specialized Micro Project for the socio-economic development of the Bonda PVTG. According to the official RTI document issued by the Office of the Project Leader, the agency was created because earlier development programmes had failed to reach primitive tribal groups living in remote hill and forest regions.

The document notes that conventional development programmes implemented through Community Development Blocks and Tribal Development Projects had limited success because they did not adequately consider the cultural practices, social institutions, geographical isolation, and traditional lifestyles of the Bonda people. Consequently, the Government of India adopted a specialized strategy through Micro Project Agencies to design development interventions suited to the socio-cultural context of PVTGs.

The Bonda community was identified as a Particularly Vulnerable Tribal Group based on characteristics such as:

- Pre-agricultural level of technology;
- Small and nearly stagnant population;
- Low literacy;
- Relative geographical isolation;
- Dependence on shifting cultivation and forest resources;
- Distinct language and cultural traditions.

The agency's principal objective is to promote the overall socio-economic development of the Bonda community while respecting their cultural identity and encouraging community participation in development programmes.

The Bonda Development Agency currently implements programmes relating to:

- Education
- Healthcare
- Drinking water
- Housing
- Agriculture and horticulture
- Livelihood promotion
- Infrastructure development
- Women's development
- Social security
- Skill development

These interventions seek to improve living standards while reducing the developmental disparities experienced by the Bonda community.

### 8.3. Didayi Development Agency

The **Didayi Development Agency (DDA)** was established in **August 1986** as a specialised Micro Project for the development of the Didayi PVTG. The agency functions under the ST & SC Development Department of the Government of Odisha and covers remote tribal settlements located in the Khairput, Chitrakonda, and adjoining regions of Malkangiri district.

Like the Bonda Development Agency, the Didayi Development Agency aims to address the socio-economic vulnerabilities of an indigenous community characterized by geographical isolation, dependence on forests, shifting cultivation, and limited access to public services.

Its principal programmes include:

- Educational development
- Public health services
- Livelihood enhancement
- Agriculture and horticulture
- Infrastructure
- Drinking water
- Housing
- Welfare schemes
- Community development

Special emphasis has been placed on improving educational participation, reducing health vulnerabilities, promoting sustainable livelihoods, and strengthening access to government welfare programmes.

## 9. Indigenous Women's Knowledge among the Bonda and Didayi

### 9.1. Women as Custodians of Indigenous Knowledge

Among both the Bonda and Didayi communities, women constitute the principal custodians of

indigenous knowledge. Their knowledge has evolved through generations of interaction with forests, hills, rivers, agricultural landscapes, and local biodiversity.

Unlike formal education systems, this knowledge is transmitted through observation, participation, storytelling, and everyday practice. Mothers introduce children to edible forest products, medicinal plants, agricultural cycles, food preparation, seed preservation, and community customs from an early age, ensuring continuity of cultural traditions.

Women's knowledge therefore represents both an economic resource and an important element of cultural identity.

### 9.2. Indigenous Agricultural Knowledge

Agriculture among the Bonda and Didayi communities combines traditional ecological understanding with practical experience accumulated over generations.

Women actively participate in:

- Seed selection and preservation;
- Preparation of cultivation plots;
- Mixed cropping;
- Soil fertility management;
- Harvesting;
- Storage of grains;
- Post-harvest processing.

Traditional cropping patterns promote biodiversity and reduce agricultural risks associated with climatic uncertainty. Indigenous varieties of millets, pulses, oilseeds, and vegetables continue to be cultivated using locally adapted practices that minimize dependence on external inputs.

### 9.3. Forest Knowledge

Forest ecosystems constitute the foundation of indigenous livelihoods.

Women possess detailed knowledge regarding:

- Seasonal availability of edible plants;
- Collection of fruits and tubers;
- Wild mushrooms;
- Honey;
- Leafy vegetables;
- Fuel wood;
- Bamboo;
- Fiber plants;
- Minor forest produce.

Traditional harvesting methods generally avoid excessive extraction, thereby contributing to ecological sustainability.

### 9.4. Traditional Healthcare

One of the most valuable components of indigenous knowledge relates to healthcare.

Bonda and Didayi women possess practical knowledge concerning:

- Medicinal herbs;
- Preparation of herbal remedies;
- Maternal healthcare;
- Nutrition during pregnancy;
- Childcare;
- Treatment of common illnesses;
- Preventive health practices.

Although modern health facilities have expanded considerably, traditional knowledge continues to complement institutional healthcare, particularly in remote settlements where immediate medical services remain difficult to access.

### 9.5. Food Security and Nutrition

Women play a central role in ensuring household food security.

Their knowledge includes:

- Preservation of traditional seeds;
- Processing of millet-based foods;
- Seasonal food storage;
- Identification of nutrient-rich forest foods;
- Preparation of fermented foods;
- Nutritional practices during lean agricultural periods.

Such practices reduce seasonal food insecurity while maintaining dietary diversity.

### 9.6. Cultural Knowledge

Women are equally important in preserving:

- Oral traditions;
- Songs;
- Ritual practices;
- Festivals;
- Indigenous language;
- Traditional dress;
- Craft traditions;
- Marriage customs;
- Community values.

Through these cultural practices, indigenous identity is continuously reproduced across generations.

## 10. Institutional Interventions and Indigenous Women's Knowledge: A Comparative Analysis of the Bonda and Didayi Development Agencies

### 10.1. Institutional Interventions and Tribal Development

Since Independence, the Government of India and the Government of Odisha have adopted various programmes for the socio-economic development of Scheduled Tribes. Recognizing the distinct developmental challenges faced by Particularly Vulnerable Tribal Groups, specialized development institutions were established to implement

interventions suited to their geographical, social and economic conditions. In Odisha, the Bonda Development Agency (1977–78) and the Didayi Development Agency (1986) represent important institutional mechanisms for addressing the developmental needs of these communities.

The two agencies have undertaken interventions in areas such as education, healthcare, agriculture, horticulture, livelihood promotion, drinking water, housing, infrastructure, women's development and social security. These interventions seek to improve access to public services and livelihood opportunities among communities living in geographically remote areas.

At the same time, an important question arises regarding the extent to which these institutional interventions recognize indigenous women's knowledge as a resource for sustainable community development. Indigenous women possess knowledge accumulated through generations of interaction with forests, agricultural systems, food resources, medicinal plants and local ecosystems. Therefore, the effectiveness of development interventions needs to be considered not only in terms of service delivery but also in terms of participation, cultural continuity and recognition of local knowledge.

### 10.2. Educational Interventions

Education constitutes an important area of intervention among the Bonda and Didayi communities. Institutional efforts include residential education, hostels, scholarships, educational materials and other forms of educational support. Such interventions have increased opportunities for tribal children and have provided greater access to formal educational institutions.

Women's education can contribute to greater awareness of government programmes, healthcare services, livelihood opportunities and participation in community institutions. At the same time, formal education may provide limited space for indigenous ecological knowledge, oral traditions, traditional agricultural practices, medicinal plant knowledge and local biodiversity.

A culturally responsive educational approach could therefore provide opportunities for interaction between formal education and community-based knowledge. Such an approach would allow younger generations to acquire formal educational skills while also maintaining connections with locally relevant knowledge systems.

### 10.3. Healthcare Interventions

Healthcare is another important area of institutional intervention. Programmes relating to maternal and child health, immunization, nutrition, health awareness and access to public healthcare services have been implemented among tribal communities.

At the community level, however, indigenous healthcare knowledge continues to form part of everyday life. Women and elders possess knowledge concerning medicinal plants, food-based remedies, nutrition, maternal care and the management of common health conditions. Such knowledge has traditionally been transmitted through observation and practical experience.

The relationship between institutional healthcare and indigenous healthcare knowledge therefore requires a sensitive and participatory approach. Documentation of community knowledge, where culturally appropriate and undertaken with community consent, may contribute to preserving knowledge while facilitating dialogue between local practices and formal healthcare systems.

### 10.4. Livelihood Promotion

Livelihood promotion represents another major area of institutional intervention. Programmes relating to agriculture, horticulture, fisheries, animal husbandry, skill development, Self-Help Groups and income-generating activities provide opportunities for livelihood diversification.

Women remain important contributors to household livelihoods through agricultural work, collection of forest produce, food processing, livestock management, seed preservation and household resource management. Their participation therefore connects institutional livelihood programmers with existing indigenous livelihood practices.

However, livelihood interventions need to recognize that indigenous communities possess locally adapted knowledge concerning mixed cropping, seed preservation, seasonal resource use and sustainable harvesting. Combining appropriate modern support with locally developed knowledge may strengthen the cultural and ecological relevance of livelihood interventions.

### 10.5. Forest Resource Management

Forest resources constitute an important component of the livelihood systems of both Bonda and Didayi communities. Women possess knowledge concerning seasonal availability of edible plants, fruits, tubers, medicinal herbs, mushrooms, bamboo, fuel wood, fibers and other minor forest produce.

Institutional programmes relating to horticulture, plantation, watershed development and alternative livelihood activities interact with these traditional resource-use systems. The participation of indigenous

women in natural-resource planning can help bring community-level knowledge into development discussions.

Women's knowledge concerning seasonal availability, resource regeneration and traditional harvesting practices can therefore be considered an important local resource for participatory approaches to forest and natural-resource management.

### 10.6. Women's Empowerment

Women's empowerment constitutes an important dimension of development interventions. Self-Help Groups, financial inclusion, livelihood activities, vocational training, health awareness and participation in community institutions have created opportunities for greater involvement of women in development processes.

However, empowerment should not be understood only through income generation or access to welfare benefits. Indigenous women also possess knowledge concerning agriculture, food systems, forest resources, traditional healthcare, biodiversity and cultural practices. Recognizing women as knowledge holders can broaden the understanding of empowerment beyond economic participation. Development institutions can therefore strengthen women's participation by creating appropriate spaces for women to contribute to planning, implementation and evaluation of programmers affecting their communities.

| Dimension | Bonda Development Agency | Didayi Development Agency |
|---|---|---|
| Year of establishment | 1977–78 | 1986 |
| Target group | Bonda PVTG | Didayi PVTG |
| Education | Residential education and educational support | Residential education and scholarships |
| Healthcare | Health and maternal-care interventions | Healthcare and nutrition-related interventions |
| Livelihood promotion | Agriculture, horticulture and skill development | Agriculture, fisheries, horticulture and livelihood activities |
| Women's participation | SHGs, livelihood activities and awareness programmers | SHGs, welfare programmes and income-generating activities |
| Indigenous knowledge | Limited formal documentation identified | Limited formal documentation identified |
| Major institutional concern | Balancing development with cultural continuity | Accessibility and preservation of traditional knowledge |

## 11. Comparative Analysis of the Bonda and Didayi Development Agencies

The Bonda Development Agency and the Didayi Development Agency were established as specialized institutional mechanisms for addressing the developmental requirements of two PVTG communities in Malkangiri district. Although both agencies work in the areas of education, healthcare, livelihoods, infrastructure and welfare, their interventions operate within the specific geographical and socio-cultural contexts of the respective communities.

The comparison indicates that both agencies address multiple dimensions of socio-economic development. At the same time, indigenous women's knowledge appears to remain primarily embedded in community and household practices rather than being systematically documented within institutional planning. This indicates an area where development interventions and indigenous knowledge systems can be more closely connected.

## 12. Discussion

The study indicates that institutional interventions have expanded access to education, healthcare, livelihood-related programmes, infrastructure and welfare services among the Bonda and Didayi communities. The development agencies have provided an institutional mechanism for addressing some of the challenges associated with geographical isolation and limited access to public services.

At the same time, the field-based information indicates that indigenous women's knowledge continues to be transmitted largely through everyday practices, family-based learning, community interaction and intergenerational participation. Women possess knowledge relating to seed selection and preservation, traditional agriculture, forest resources, food processing, medicinal plants, nutrition and cultural practices.

One important observation emerging from the study is the limited formal institutional documentation of indigenous women's knowledge. Development programmes address several dimensions of socio-

economic development, but indigenous knowledge is not consistently visible as a distinct component of institutional planning. Consequently, there remains a gap between knowledge existing within communities and its formal recognition within development programmes.

The comparison of the two development agencies also demonstrates the importance of context-specific planning. Although both agencies address similar broad areas of development, the geographical, ecological and socio-cultural circumstances of the Bonda and Didayi communities differ. Development interventions therefore need to remain responsive to community-specific conditions rather than relying exclusively on standardized approaches.

The study further indicates that women's participation should not be understood only in terms of income generation or access to welfare programmes. Indigenous women possess knowledge that contributes to household food security, agricultural practices, natural-resource use, traditional healthcare and cultural continuity. Recognising this knowledge can strengthen participatory approaches to community development.

The findings therefore suggest that greater participation of indigenous women in the identification, documentation and application of local knowledge could strengthen the cultural and ecological relevance of development programmes. Educational initiatives, livelihood programmes, natural-resource management and local development planning can provide appropriate spaces for incorporating community knowledge while respecting cultural ownership and community consent.

## 13. Conclusion

Indigenous women constitute an important source of knowledge for the social, economic, cultural and ecological sustainability of tribal communities. The experiences of the Bonda and Didayi communities of Malkangiri demonstrate that women's knowledge extends across agriculture, forest resources, food systems, traditional healthcare, biodiversity conservation and cultural practices. Such knowledge has developed through long-term interaction with local environments and continues to be transmitted through everyday community life.

The Bonda Development Agency and Didayi Development Agency have undertaken interventions in education, healthcare, livelihoods, infrastructure, welfare and women's development. These institutional interventions provide important support for improving access to public services and development opportunities. However, the analysis also indicates that indigenous women's knowledge remains insufficiently incorporated into formal development planning.

Sustainable community development therefore requires an approach that combines appropriate institutional support with recognition of locally developed knowledge. Indigenous women should be recognised not merely as beneficiaries of development programmes but also as knowledge holders and participants in decision-making. Greater opportunities for women's participation in educational planning, livelihood development, natural-resource management, documentation of local knowledge and community governance can strengthen the relevance of development interventions.

The study concludes that the preservation of indigenous knowledge should not mean resisting development or modern services. Rather, development planning should create meaningful spaces where appropriate institutional knowledge and community-based knowledge can interact. A participatory and gender-responsive approach can contribute to both socio-economic development and the continuity of indigenous knowledge among the Bonda and Didayi communities.

**Funding Statement**

This research was supported by the Mukhyamantri Research and Innovation Fellowship Program (MRIP) of the Odisha State Higher Education Council (OSHEC), Government of Odisha, through Berhampur University. The fellowship support was utilised for academic and research-related activities associated with the study. No financial support from any other funding agency was received for the conduct of this research.

**Acknowledgements**

The author gratefully acknowledges Berhampur University and the Odisha State Higher Education Council (OSHEC), Government of Odisha, for their institutional and research support. The author also expresses sincere gratitude to the officials, community members, tribal women and other participants who contributed their time, experiences and perspectives to this study.

## References

[1] Food and Agriculture Organization of the United Nations. (2004). *Building on gender, agrobiodiversity and local knowledge: A training manual*. FAO.

[2] Food and Agriculture Organization of the United Nations. (2021). *The State of the World's Forests 2021: Forest pathways for*

*green recovery and building inclusive, resilient and sustainable economies*. FAO.

[3] Government of India. (2014). *Report of the High Level Committee on Socio-Economic, Health and Educational Status of Tribal Communities of India*. Ministry of Tribal Affairs.

[4] Government of Odisha. (2023). *Odisha Economic Survey 2022–23*. Planning and Convergence Department.

[5] Government of Odisha. (2023). *Statistical Abstract of Odisha 2023*. Directorate of Economics and Statistics.

[6] International Labour Organization. (2017). *Indigenous women at the heart of sustainable development*. ILO.

[7] Madhav Gadgil., & Fikret Berkes. (1991). Traditional resource management systems. *Resource Management and Optimization, 8*(3–4), 127–141.

[8] Fikret Berkes. (2018). *Sacred ecology* (4th ed.). Routledge.

[9] Darrell A. Posey. (1999). *Cultural and spiritual values of biodiversity*. Intermediate Technology Publications.

[10] Vandana Shiva. (1988). *Staying alive: Women, ecology and development*. Zed Books.

[11] Vandana Shiva. (1993). *Monocultures of the mind: Perspectives on biodiversity and biotechnology*. Zed Books.

[12] United Nations. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*.

[13] United Nations Educational, Scientific and Cultural Organization. (2017). *Local and indigenous knowledge systems (LINKS) Programme*.

[14] World Commission on Environment and Development. (1987). *Our common future*. Oxford University Press.

[15] Walter Fernandes. (2006). Development-induced displacement and tribal women in India. *Social Change, 36*(2), 19–36.

[16] Nandini Sundar. (2009). *Subalterns and sovereigns: An anthropological history of Bastar (1854–2006)* (2nd ed.). Oxford University Press.

[17] Ministry of Tribal Affairs. (2022). *Annual Report 2021–22*. Government of India.

[18] National Scheduled Tribes Finance and Development Corporation. (2021). *Annual Report 2020–21*.

[19] NITI Aayog. (2018). *Strategy for New India @75*.

[20] Office of the Registrar General & Census Commissioner, India. (2011). *Census of India 2011: Primary Census Abstract for Scheduled Tribes*.

[21] Scheduled Castes and Scheduled Tribes Research and Training Institute. (2010). *Tribal Atlas of Odisha*. Government of Odisha.

[22] Scheduled Castes and Scheduled Tribes Research and Training Institute. (2013). *Particularly Vulnerable Tribal Groups of Odisha*. Government of Odisha.

[23] Bonda Development Agency. (2026). *Information supplied under the Right to Information Act, 2005*. Office of the Project Administrator, Khairput. *(Primary source used in this study.)*

[24] Didayi Development Agency. (2026). *Information supplied under the Right to Information Act, 2005*. Office of the Project Administrator, Kudumulugumma. *(Primary source used in this study.)*

[25] Integrated Tribal Development Agency. (Various years). *Annual Administrative Reports*. Government of Odisha.

[26] Odisha Tribal Empowerment and Livelihoods Programme. (Various years). *Programme Reports*. Government of Odisha.

[27] Tripathy, A. K. (2021). Women empowerment through SHGs: A case study of Jalgaon District of Maharashtra. *International Journal of Trend in Scientific Research and Development, 5*(6), 24–39.

[28] Panda, A. K., & Tripathy, A. K. (2020). Impact of MGNREGA on rural development: A case study of Krushna Prasad GP of Puri District. *International Journal of Trend in Scientific Research and Development, 4*(6), 1872–1881.

[29] Tripathy, A. K., & Mallick, S. K. (2025). Impact of development programmes on the socio-economic life of the Paraja tribe: A micro study from Koraput District, Odisha. *Research Journal of Berhampur University, 9*, 72–78.

[30] Tripathy, A. K., & Mallick, S. K. (2025). Tribal women's social development and empowerment: An impact assessment of

Subhadra Scheme. *Tribal Studies: A Journal of Council of Analytical Tribal Studies (COATS), 13*(2), 68–78.

[31] Tripathy, A. K., & Sadangi, K. K. (2023). Problems of slum dwellers: A case study of Jeypore Municipality of Odisha. *Research Journal of Berhampur University, 6*, 56–? .

[32] Tripathy, A. K., & Mohapatra, R. (2022). Impact of PESA Act in scheduled areas: A case study of Rayagada District of Odisha. *International Journal of Trend in Scientific Research and Development, 6*(2), 388–407.

[33] Tripathy, A. K., & Ranjitha, G. V. V. (2022). Contribution of tribal leaders of Malkangiri in freedom movement of India. *International Journal of Trend in Scientific Research and Development, 6*(5), 1430–1441.

[34] Tripathy, A. K. (2021). Performance analysis of MGNREGA: A micro study of Gadapadar GP of Jeypore Block. *International Journal of Trend in Scientific Research and Development, 5*(3), 142–147.

[35] Tripathy, A. K., & Patra, K. K. (2021). Role of tourism in economic development: A case study of Koraput District of Odisha. *International Journal of Trend in Scientific Research and Development, 6*(1), 426–445.

[36] Tripathy, A. K. (2021). Women empowerment through SHGs: A micro study of Gadapadar GP of Jeypore Block. *International Journal of Trend in Scientific Research and Development, 5*(4), 1758–1764.

[37] Tripathy, A. K. (2023). A dynamic nexus between gender and socio-economic prevalence among tribals of undivided Koraput District of Odisha. *Odisha Journal of Commerce and Management, 9*(1), 37–48.

