

FINAL

**DISTRICT-DRIVEN GROWTH**  
**A PILOT STUDY FOR MAKING INDIA A \$5**  
**TRILLION ECONOMY**

**REPORT FOR SINDHUDURG DISTRICT**

**SUBMITTED BY:**  
**NATIONAL COUNCIL OF APPLIED ECONOMIC RESEARCH**  
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# EXECUTIVE SUMMARY

## 1. Introduction

The Department of Industrial Policy and Promotion (DIPP), Govt. of India, has constituted a “\$5-Trillion-Economy Working Group” (2018), to prepare a strategy to make India a \$ 5 Trillion economy by 2025. The Working Group has recommended a bottom-up approach with districts as planning units, to help achieve additional 2-3 per cent economic growth in identified districts. The DIPP commissioned the National Council of Applied Economic Research (NCAER) to carry out these exercise for Ratnagiri and Sindhudurg districts (Maharashtra) and Solan (Himachal Pradesh). The first phase (3 months) involved analysis of secondary data, field visits, and consultations with key district stakeholders, to prepare a draft Strategic Plan identifying the key thrust areas for detailing in the second phase<sup>1</sup>. This document presents the findings from the exercise conducted in Phase 1, for **Sindhudurg** district.

## 2. District Overview

Sindhudurg was carved out of the undivided Ratnagiri district in 1981, and is home to about 8.5 lakh population (Census 2011), 87 percent of whom live in rural areas. Spread over 5207 sq. km, it has a 121 km Arabian Sea coast to the east, the Sahyadri hills of the Western Ghats ecosystem passing through, with the Sindhudurg plateau in between. The district receives high rainfall of 3.2 m annually, and has patches of good forests, albeit most of which are located on private lands.

With low population density (163 persons per sq. km, Maharashtra average 365) and a small economic base (less than one percent contribution to the State’s GDP), this “Tourism” district is yet to realize its economic potential. At present, about 64 percent of the workforce is employed in agriculture and allied activities, 12 percent in industry and 24 percent in services. The services sectors mainly Trade, hotels & restaurants and financial services, contribute about 12.8 percent and 15.7 percent to the district’s GDP. Agriculture and industrial sectors each account for about 20 percent to district GDP. Within these sectors, growing of crops and construction are respectively the main contributors.

In terms of physical and social infrastructure, Sindhudurg’s rural areas are far better than the Maharashtra rural average for many of the education, health and other amenities.

<sup>1</sup> Phase 2, of 9 months duration, shall involve mentoring and hand-holding the District Administration in the detailing and implementation of identified sectors and actions, including capacity building and skilling initiatives.



The district has made commendable progress in some areas like rural sanitation, and became one of the first districts to be declared Open Defecation Free (ODF) in 2016. The district however presents the contrast of untapped economic potential side by side the phenomenon of migration, especially of men who go out in search of employment to other Maharashtra districts, leaving a large proportion of women participating in economic activities.

### 3. Recommendations for Areas Identified for Accelerating Economic Growth

The key sectors and activities with potential in the future include:

#### i. Tourism

- Infrastructure development including improvement in the mode of travel – road/rail/airways; and better availability of banking, ATMs and forex facilities.
- To attract foreign tourists to Sindhudurg district, locations and experiences will need to be curated and positioned to be visible on international-tourist map.
- Improvement of quality of tourist infrastructure and services including greater number and variety of accommodation, eating houses, way-side facilities, etc.
- Improvement of communication facilities, including easy access to telephones/ fax/ internet etc. and the availability of trained guides. Also, better signages and information kits.
- Attracting a higher number of tour operators establishments to have local spokes.
- Improvement of security and safety systems; better facilities' management like parking, site cleanliness and pilgrim management, etc.
- Development of environmentally sensitive tourism that generates employment for local communities and does not exacerbate the man-animal conflict.
- Malvani branding: for promoting Konkani cuisine and impart training and food-processing to create/extend the market for the Konkani products.
- Passenger cruise ship services
- Agency to local administration to promote tourism and attract private sector: While strategic planning and infrastructure development may have to be their remit, attracting private sector, finding local-population based innovations and solutions, and local level planning and services regulation may be better discharged if entrusted to local administration and private sector agencies.

#### ii. Mangoes

- Cluster formation for mango cultivation for harmonizing production.
- Awareness programmes for production and professional marketing



- Awareness about GI tag for the farmers so that they understand the GI rights and opportunities available for them.
- Separate Mandi for Alphonso mango in district/region.
- Marketing awareness is essential in and outside the district.
- Devgad is specific place for mango cultivation, so there should be some market development in Devgad for mango, which will also add value to tourism.
- Development of regimen for improved pest management and other inputs.
- Common storage facilities for Mangos on priority in distributed locations.
- Adoption of Ultra- High Density Plantation (UHDP): to improve productivity

### iii. Cashew

- Promotion of cashew production and processing on a cluster basis.
- Testing of contract farming can be a solution for small and unorganized producers.
- Common warehouse and cold storage facilities in taluka on priority based.
- Awareness programmes needed for improved production and processing practices for marketing of Cashew.
- Exploration of the scope for cashew apple processing
- R&D support and Cashew Export Promotion Council of India centre in the region
- Port development to facilitate direct export from the district, instead of routing via Mumbai.

Care needs to be taken to ensure that promotion of mango and cashew is done with care so that there is an emphasis on improving and managing the existing orchards through subsidy and capacity building rather than promoting new plantations at the costs of forests and biodiversity. Promoting native cashew and mangos that are far more resilient and could also be options for creating a win-win.

### iv. Fisheries

- Deep-sea fishing should be encouraged by providing financial assistance to local fisher folk on priority basis, along with training and equipment.
- Marine water fishes in cages to be promoted in sea by providing financial assistance.
- Provision of basic facilities in the landing point including drinking water, toilet facilities, electricity, street light, fish drying area, action hall etc.
- Provision of cold storages having capacity of 1 to 2 tones on a PPP basis.
- Increase the processing units to use the sufficient supply of fresh fish in the area.
- To regulate illegal fishing, share information of the GPS data from light-house with district administration.
- Number of landing points should be increased in the district.



- ETPs may be provided to the processing units on PPP basis on a cluster basis.
- Skill training for fisheries sector for processing unit development.
- Port development to help fish export and also, cargo transport in the district.
- Awareness and empowerment programme for the women engaged in this sector.
- The district coastal zone management committee may prioritize the protection and restoration of coastal habitats and biodiversity on a priority basis.
- Quality ice, water and diesel to be provided to fisherman on reasonable price.
- Permanent arrangements to remove accumulated silt from ports.
- Maintain and grow mangroves along sea and creek coast.
- Construction of small units for separation of meat from fishes on the landing center so that self-help group will start production of value added items of fish.

### v. Other sectors and activities

Promotion of Coir has also been identified as a potential area, along with rejuvenation of some of the earlier initiatives with respect to small and tiny sector industrial areas, as well as planned investments in medium and major industries.

According to CSIR report (2018) training of people in ethnic leather footwear manufacture, establishment of cottage and small scale units for production of ethnic footwear and facilitation of establishment of market linkage. In addition to this, establishment, maintenance, up gradation and dissemination of national Standards of measurements support can be provided which is expected to contribute to the improvement in the quality of the product and an overall growth and development of several other industries in the district leading to growth.

### 4. Special Initiative of “Chanda te Banda” in Sindhudurg district

Chanda to Banda is a unique micro-planning project. Chanda represents Chandrapur and Banda is a town at the Goa border in Sindhudurg, which is often used to refer to the width of the state in layman’s language. This is a unique approach towards development where economy, environment and human development will go hand-in-hand. *The plan is to double the per capita income in Chandrapur and Sindhudurg districts, along with similar growth in human development indicators, as the project will touch upon every citizen, including students, farmers, fisherman, horticulturists, women and labourers.*

The broad objective of the project is increase the annual per capita income of Sindhudurg and Chandrapur. The idea was to bring all government departments together to chalk out comprehensive plan involving micro-planning with identifying people’s need, studying available resources in the whole district, chalking out environment-friendly holistic development plans, including public-private partnerships and private investment.



## 5. Capacity Building and human resources development

- Training programme for gem & jewellery sector at Sindhudurg: has conducted by the Gem & Jewellery Export Promotion Council (GJEPC). Considering the proximity of Ratnagiri and Sindhudurg to Goa, a gem and jewellery development in this region can substantially contribute to the exports. GJEPC has also identified that around 5000 women from Sindhudurg region would like to get trained in imitation and tribal jewellery. Such training programmes would be a step towards empowering the women in this region.
- Employment Exchange Registration: Maharashtra makes second largest contribution to India's population – thus becoming a large contributor to the India's demographic dividend. The Government of Maharashtra has set itself up a target of generating 4.5 crore skilled manpower by 2022. In order to achieve this target, 45 lakhs skilled manpower shall need to be produced every year by the state for 10 years. This has potential in Sindhudurg.
- Jana Shikshan Sansthan (JSS): Sindhudurg has the distinction of being the first ever JSS in a rural area in the country. The core objectives of the Scheme were: (1) Low cost training in demand driven employability skills Development self-employment avenues for utilizing local resources. (2) Literacy and life enrichment education. (3) Women's empowerment and equality. (4) Health camps. (5) Environmental and AIDS awareness. (6) Entrepreneurship development (7) Exhibitions of products made by beneficiaries. (8) Street plays on different themes. (9) Population studies. (10) Information about Government schemes. The focus of the scheme are to improve the occupational skills & technical knowledge of the neo-literates through skill development programs, to organize training and orientation courses for key resource persons and master trainers on designing, development & implementation of skill development programs, to organize equivalency programs through the Open Learning System and to promote national goals such as secularism, national integration, population and development, women's equality, protection and conservation of environment. Apart from this the specific services offered under this scheme is tailoring, beauty and hair care, nursing assistant, anganwadi/ balwadi teacher, wireman, security guard, electrical repairs, welding and fabrication, air conditioning, two wheeler repairing, watch repairing, hair cutting saloon etc.

Further skilling and training programmes will need to be developed depending on the sector and activities chosen for detailing and implementation.

## 6. Action Plan and Progress Yardstick

Table (E.1) presents the proposed short-term plan of actions in the identified domains, and the indicators to measure progress.



**Table (E.1): Short Term Action Plan and Indicators of Progress**

Areas	Action Points	Progress Yardsticks	Departments	Convergence with scheme
<b>Tourism</b>	Beach and forest eco-tourism, regulation, better tourist facilities and signage's	Number of beach locations secured for responsible tourism; Nodal officers appointed at the District Administration for local beach and forest tourism regulation and oversight; Number of tourist locations with improved signage; water and sanitation arrangements; and hygienic eating houses; <i>Malvani-branded</i> eating houses and handcraft / processed food outlets in key locations	Tourism Department	Scheme of Rural Tourism
	Promotion of tourist-friendly cashless economy	Number of hotels and restaurant having cashless transaction facilities.	Bank of India	Initiative can be taken by lead Bank.
<b>Cashew</b>	Develop Cashew Clusters for production and processing	Change in level of production; Change in output of processed cashew; Change in income and welfare of labourers	Department of Agriculture	Cluster Development Program (CDP), Ministry of MSME
	Awareness campaign and training programmes	Number of persons trained; Campaign awareness achieved amongst farmers and producers	Department of Agriculture	Special training Programmes for farmers and producers under the schemes of "Minimum Skill Development Programme" and "Extension of Youth Welfare Programme in Rural areas"
	Build common warehouse and cold storage facilities	Number of facilities built; Availability of raw cashew during off-season	Department of Agriculture	Common Facility Centre under Cluster Development program
	Open a branch of Cashew Export Promotion Council of India	Benefit of government incentives to producers	Ministry of Commerce, Cashew Export Promotion Council of India	-
	Cashew apple processing on experimental basis	Results of experimental processing – benefits and costs assessed	Regional Fruit Research Station, Vengurla	National Horticulture Mission
<b>Mango</b>	Develop mango clusters for cultivation	Change in level of production by variety; Change in income of farmers and labourers	Department of Agriculture	Cluster Development Program, Ministry of MSME
	Awareness on GI tag	Benefits availed due to GI tag by farmers and marketing agencies	District Industry Centre	-
	Marketing campaign	Change in level of marketed produce; Change in incomes of farmers, labourers	Department of Agriculture	APMC



	Develop separate <i>Mandi</i> for Alphonso mango	Change in volume and price-realization of mangoes sold by variety	Department of Agriculture	APMC
	Improved pesticides to be developed	Reduction in crop-loss and fluctuations in production - levels due to pest attacks	Regional Fruit Research station, Vengurla	-
	Build common warehouse and cold storage facilities	Number of facilities built; Availability of mango/products during off-season	District Industry Centre	Common Facility Centre under CDP
	Ultra- High Density Plantation (UHDP) to be tried on experimental basis	Change in per acre productivity	Department of Agriculture	-
<b>Fisheries</b>	Make available basic facilities at landing points	Basic facilities available for fisher folks' welfare	National Fisheries Development Board; District Fisheries Department	Blue Revolution: Integrated Development and Management of Fisheries
	Develop Cold storage facilities	Number of new facilities developed	National Fisheries Development Board; District Fisheries Department	Blue Revolution: Integrated Development and Management of Fisheries

## 7. Next Steps

The following steps are recommended for the Second Phase (9 months):

- Agreement on the identified sectors and activities for detailing and development
- Preparation of Action Plan in consultation with DIPP, GoM, and District Administration
- Setting up a Nodal coordinating unit in the DC or CEO ZP office, and assigning personnel with powers to implement plans
- Outreach to Private Sector and Investors in the district and the state – organization of a workshop in the style of investor meets after due preparations
- Other action items as emergent

## 8. Report Outline

After introduction to the scope of the study in Chapter 1, Chapter 2 presents a brief overview of Sindhudurg district in terms of its geographical and social profile. The economic and infrastructural profile of the district, covering analysis of District Gross Domestic Product, employment, infrastructure and household amenities etc., are presented in Chapter 3. Chapter 4 identifies the key promising economic activities, and assesses the challenges and opportunities. Human resources and institutional capacity are outlined in Chapter 5. Chapter 6 presents the recommendations for Phase 2.



## I. INTRODUCTION

### I.1. Context of the study

The Department of Industrial Policy and Promotion (DIPP) constituted a “\$5-Trillion-Economy Working Group”, which held its first meeting on 15<sup>th</sup> March, 2018. This Working group has set an agenda to prepare a strategy to make India a \$ 5 Trillion economy by 2025. One of the key highlights that has emerged from the first meeting of the Working Group is that for a sustained high growth, a bottom-up approach with districts as planning units is the need of the hour. With so many innovations in IT, we are at a unique stage of development where decentralized and more participatory planning, which has been articulated over a long period of time, can be effectively implemented. For better outcomes, plans that are relevant to local areas will be successful if these are owned and led by district and local governments, with the support of local entrepreneurs, farmers, traders, and citizens.

This approach would involve the districts more actively in the future growth of the Indian economy, allowing policymakers at all levels to formulate a development vision starting from the district-level. Keeping the above in view, there is a need to undertake action-oriented policy research at the district level to enable districts to achieve an additional 2-3 per cent growth.

The DIPP has commissioned the National Council of Applied Economic Research (NCAER) to carry out the exercise for Ratnagiri and Sindhudurg districts (Maharashtra) and Solan (HP). It has been further decided by DIPP that:

- The work will be completed within a period of one year and carried out in two phases.
- Phase I, to be completed within three months from the date of agreement, shall involve preparation of the Plan in consultation with the District Administration and relevant stakeholders.
- Phase 2 of the work, over 9 months, shall involve mentoring and hand-holding the District Administration in implementation and capacity building and skilling initiatives



## I.2. Objectives

As provided in the Terms of References (ToR), the overall aim of the study will be to develop District Strategies for accelerating growth by about 2-3 per cent. The objectives of the Phase I of the study were:

- To prepare a Baseline profile of the District.
- In consultations with the district administration and various stakeholders:
  - To identify key areas to prepare the detailed strategy
  - To identify resources, strengths and risks including skills available
  - To suggest interventions for key economic sectors; for skilling; and for improving the business environment in the district.

## I.3. Method and Data Sources

The first phase of the exercise used a mix of secondary data analyses and primary interactions with State and district stakeholders for identifying the key areas for developing the draft Strategic Plan.

**Secondary Data Analysis:** This report is based on secondary data collected from official data-sources such as the Census of India, Directorate of Economics and Statistics (GoM), Brief Industrial Profile of Sindhudurg district (Ministry of MSME, Govt. of India), National Sample Survey (NSS), and data from the periodic Economic Census, Agriculture Census, specialized govt. and trade bodies, etc. Data, research papers and media reports from different govt. and private websites have also been used for analysis.

**Stakeholder Meetings:** The NCAER Team carried out field visits, and held meetings and consultations with stakeholders in the State (Mumbai, especially the Economic and Statistics Dept., Tourism, etc.) and in the district. District interactions included the Collector and other key officers in the district administration (viz. the CEO-ZP, and agencies working in agriculture and horticulture, industries, fisheries, tourism, forests, etc.), selected industries and entrepreneurs from Sindhudurg district (including visits to select factories and processing units).

## I.4. Limitations

The limited three-month' time-frame permitted only an initial identification of strategic thrust areas, and in particular, the following limitations may be noted:



- **Lack of reliable district level economic data:** Although basic socio-economic and demographic profiles of the district are available from official data sources, data on specific economic activities is available only at the State level, e.g. NSS data. Further, economic data like GDDP estimates for the district are available only as a composite but not at disaggregated in terms of primary, secondary and tertiary sectors, making it difficult to assess the sectoral growth and its contribution. District level estimates for specific economic activities too (e.g. tourism, fishing, etc.) are dated or not available. This has necessitated estimations and dependence on anecdotal evidence.
- **Selective interactions with Stakeholders:** The data and analysed information on trends in different sectors have been discussed with a wide range govt. stakeholder agencies and departments, as well as with private sector agencies. Despite many in number, these interactions have been selective and may not be fully representative of the large variety and number of economic agents active in the district. Therefore, some of the claims and issues reported may be subject to revisions during the detailing of strategies and action plans in Phase 2.



## II. SINDHUDURG DISTRICT OVERVIEW

### II.1. Background

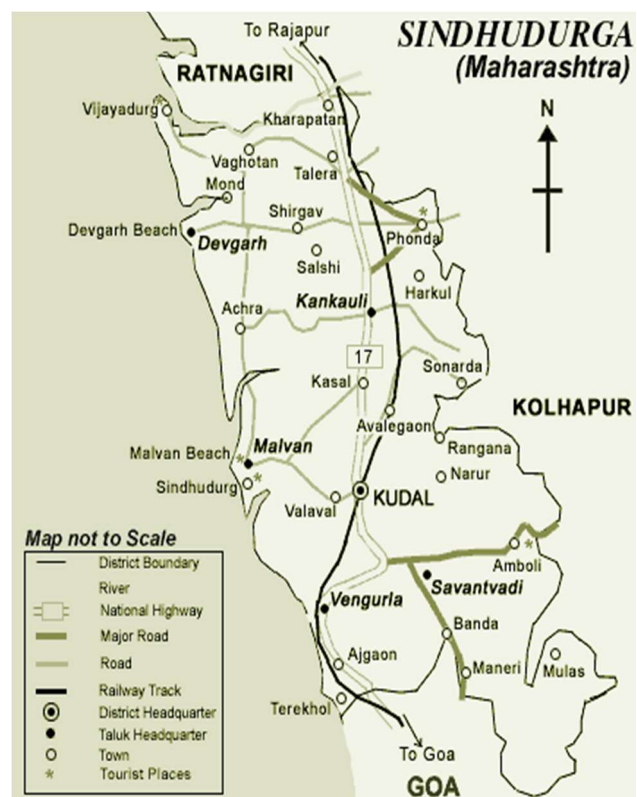
Situated at the southern part of ‘Konkan’, Sindhudurg is an administrative district in Maharashtra. Carving out from the former Ratnagiri district, Sindhudurg was formed on 1 May, 1981. The district was named after the fort of Sindhudurg, which lies on a rocky island just off the coast of Malvan<sup>2</sup>. Famous for its serene and beautiful beaches, temples, historical forts and folk art forms like Dashavtar, Chitrakathi, Pangul, Keertan, Dhangiri dance, Sindhudurg has a great potential to becoming an international tourism destination. Spreading to the borderline of Goa, the district was declared as a ‘Tourism District’ in 1997.

The district is divided into three sub-divisions, viz. Kankavali, Kudal and Sawantwadi. There are 752 villages in 433 Gram Panchayats in 8 tehsils in the district. The district headquarters are located at Sindhudurg Nagari, with the main Government offices in Oros. The people of Sindhudurg district mostly speak a distinct Konkani dialect Malvani, while almost all are fluent in Marathi. Hindi is also spoken by a majority of the population.

### II.2. Geographic profile

The geographical area of the district is 5,207 sq. km. The district is surrounded by the Arabian Sea on the east, Belgaum district (Karnataka State) and Goa on the South, and the Ratnagiri district on the North.

Sindhudurg has sea coast-line of 121 km and fishing area of 16000 sq. km<sup>3</sup>. Sindhudurg is accessible by road on the National Highway 17 (NH 17) that passes through major towns of Kankavli, Kudal and Sawantwadi, or by the picturesque journey on the Konkan Railway with stops at Kankavli, Sindhudurg, Kudal and Sawantwadi.



<sup>2</sup> <http://divcomkonkan.gov.in/Document/en/page/Sindhudurg.aspx>

<sup>3</sup>

[http://shodhganga.inflibnet.ac.in/bitstream/10603/13227/12/12\\_chapter%20iii%20research%20methodology.pdf](http://shodhganga.inflibnet.ac.in/bitstream/10603/13227/12/12_chapter%20iii%20research%20methodology.pdf)



## II.3. Area and Topography

Based on the elevation and local topography, the district is divided into three small subdivisions<sup>4</sup>, viz., (i) Sahyadri hills that runs along the eastern boundary of the district; (ii) Sindhudurg plateau; and (iii) Sindhudurg coast.

### i) The Sahyadri Hills

Covering eastern portion of the district, the hills have three parts: (i) Vaibhavwadi Tahsil, (ii) Kankavli, Kudal and Sawantwadi Tahsil and (iii) Dodamarg Tahsil. This part of the district is the source for most of the rivers in the district. Having very steep slopes and fairly covered by forests, Sahyadri hills have a mean sea level of over 200 metres at the bottom while at the upper reaches they attain a height of about 700 metres.

### ii) Sindhudurg Plateau

Sindhudurg plateau covers parts of all tehsils of the district except Vaibhavwadi tehsil. Extending in a north-south direction through the central portion of the district, it has transverse chain of small hills, projecting from the Sahyadri hills, and developing higher elevation in middle portions. This region is drained mainly by parallel westward flowing streams. Although the soil on the slopes of the hills is partly eroded, yellowish-red in colour, and poor in fertility having shallow depth and coarse texture, the main crops grown in the region are rice, ragi, cashew nut, famous Alphonso mango and kokum.

### iii) Sindhudurg Coast

Sindhudurg coast covers parts of Devgad, Malvan, Vengurla and Sawantwadi tehsil. Rice, coconut, areca nut are grown in the area despite having lots of cliffs in the area.

## Climate & Rainfall

The climate is generally moist and humid and the temperature variations during the day and throughout the seasons are not large. The maximum temperatures touch 33.8 degree Celsius, whereas the minimum temperatures hover around 16.3 degrees Celsius. The district receives rain for full four months i.e. June, July, August and September<sup>5</sup>.

<sup>4</sup> District Survey Report: For Minor Mineral Including sand & stone Sindhudurg District, Maharashtra; Prepared by District Mining Officer, Sindhudurg Dated-

02.05.2017[[http://environmentclearance.nic.in/writereaddata/Online/additionalfile/14\\_Nov\\_2017\\_1655267200Q3I2PMFDistrictSurveyReport.pdf](http://environmentclearance.nic.in/writereaddata/Online/additionalfile/14_Nov_2017_1655267200Q3I2PMFDistrictSurveyReport.pdf) accessed on 28/11/2018]

<sup>5</sup> Brief Industrial profile of Sindhudurg District, MSME-Development Institute, [<http://dcmsme.gov.in/dips/state%20profile%20sindhudurg.pdf> accessed on 11/10/2018]



The average annual rainfall in the district is about 3,287 mms<sup>6</sup>. Though the average rainfall is rather high, almost all the rainwater runs off due to undulating topography and lack of any water impounding and storage structures. Among the important rivers flowing through the district are Terekhol River, the Gad River, the Devgad River, the Karli River and the Vaghotan River.

## Soil

The soil of the district is mainly four types: Rice soil, Garden soil, Varkas soil and Alluvial soil<sup>7</sup> The Rice soils are termed as ‘Mali soils’ when situated in higher levels, ‘Kuryat soils’ in lower levels and ‘Panthar or Vaigam’ when situated near water courses. Varkas soils are reddish brown to yellowish red in colour and are situated on hill slopes. These soils are poor in fertility, shallow in depth and coarse in texture. Garden soils are of mixed origin, yellow red to brown in color and are located in the valley portions. These soils are light, well drained and fairly fertile. Coastal Alluvial soils are recent deposits found along the coastal tracts and constitute deep loam. Due to inundation of sea, parts of the coastal soils have become salty. In the Deogad, Malwan and Vengurla talukas, the entire strip is impacted by salt ingress. Rice, Coconut, kokam, Mango, and Cashew are the main crops in the district.

## Forest

Cover by dense rain forest, the Amboli hill station area has dense forests mostly suitable for wild animals including leopard, wild cats, rabbits, wild hen and sometimes migrant wild buffaloes. Another area covered with lush dense rain forest is the Tillari irrigation project in Dodamarg taluka. Having lots of elephant population, the man-wildlife conflicts are reported from these area

## II.4. Administrative Setup

The Sindhudurg district is divided into 8 tahsils of Malvan, Devgardh, Vaibhawadi, Kankavali, Sawantwadi, Vengurla Kudal and Dodamarg. The district has 740 inhabited villages in 433 Gram Panchayats, five urban areas, 9 police stations and 23 police outposts.

The District Collector (DC) is administrative chief of the district, assisted by the Superintendent of Police, for law and order. For development activities, the Chief Executive Officer of Zilla Parishad (CEO, ZP) is the administrative head, and heads the executive arm of the District level elected self-government or the Zila Parishad, headed

<sup>6</sup> ibid

<sup>7</sup> ibid



by an elected Chairman and elected representatives. Municipal Councils, also elected bodies with executive arms, are responsible for urban services in the five towns.

## II.5. Demographic and social profile

The population of Sindhudurg was 8.5 lakh (Census, 2011) that is less than one percent of the total population of Maharashtra. The district's population density is 163 persons per sq. km in comparison to Maharashtra's average of 365 persons per sq. km. The sex ratio is 1,036 females per 1000 males. The sex ratio for rural Sindhudurg is 1,044, significantly higher than the urban ratio at 979. The district is known for many of its male population migrating to other locations in Maharashtra for work. The average literacy rate is 85.6 percent, with males' literacy rate at 91.6 percent and females' at 79.8 percent. Sindhudurg has 12.6 per cent of people residing in urban areas. This is significantly lower than Maharashtra average of 45.2 per cent.



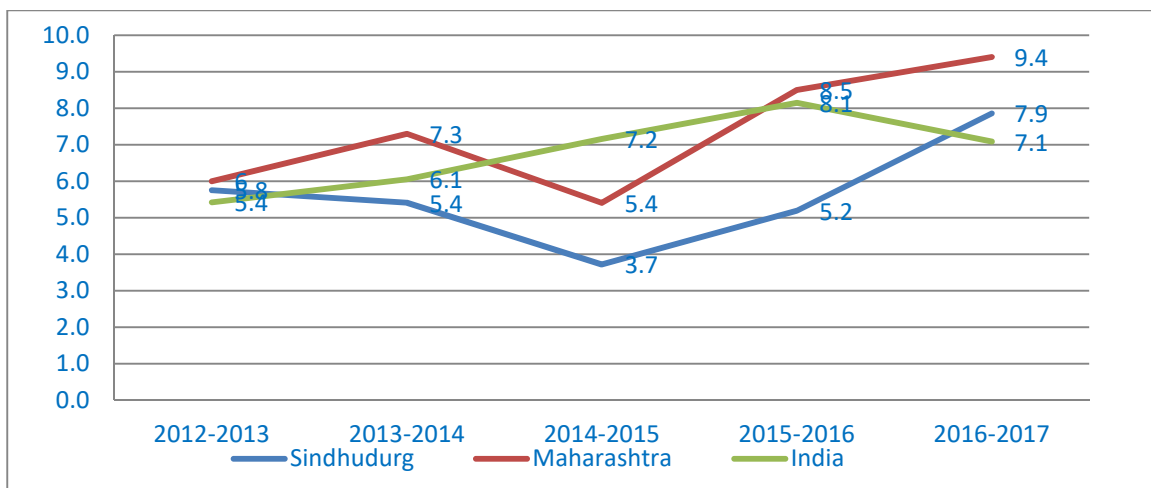
## III. ECONOMIC AND INFRASTRUCTURE DEVELOPMENT

### III.1 Gross Domestic Product

In Maharashtra, nearly 40 percent of the GSDP (or the State’s GDP) is contributed by only the three districts of Mumbai, Thane and Pune. The rest of the districts contribute less than five percent each to the GSDP. According to the estimates for 2016-17, as many as 13 districts accounted for less than one percent each of the state GDP.

Sindhudurg contributes just about a half percent to the economy of Maharashtra, according to the latest Gross District Domestic Product (GDDP) series available in Maharashtra Economic Survey for 2017-18. Albeit the slower pace of growth as compared to that of the State, the district’s economy has been growing consistently. The annual growth in 2016-17 stood at 7.9 percent, the highest since the new base year of 2011-12.

**Figure III.1: GDP growth at constant price (% , y-o-y)**



Source: Calculated from Economic Survey of Maharashtra, 2016-17; and Ministry of Statistics and Programme Implementation (MOSPI, Govt. of India)

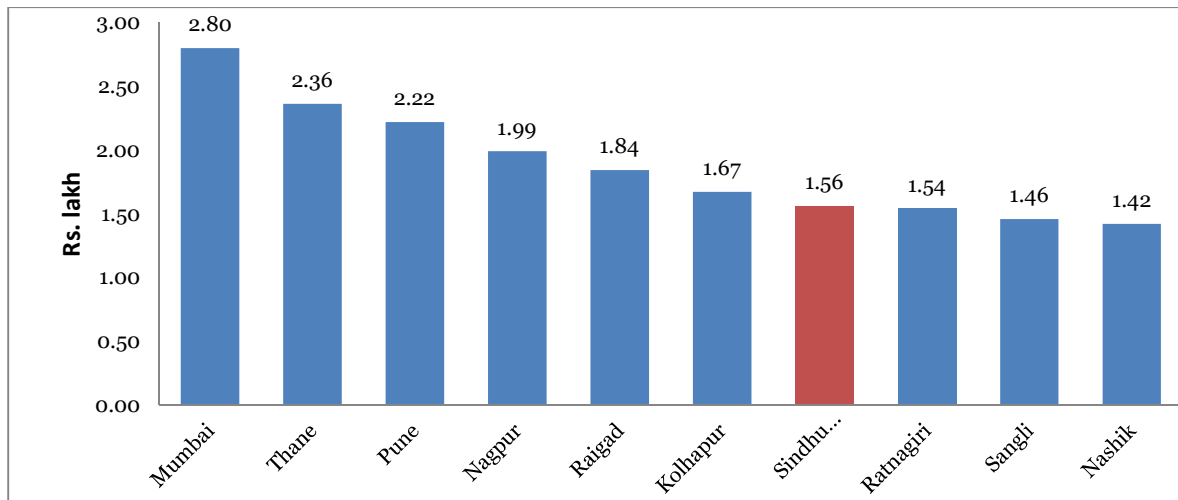
Of the 34 districts in the State, Sindhudurg ranked 30th or 31st with respect to the value of GDP (at constant price, 2011-12), better than only Washim, Gadchiroli and Hingoli districts.

On the other hand, in respect of per capita income, the district figures among top 10 districts in the state, occupying 7th position in 2016-17, behind only the big districts of



Mumbai, Thane, Pune, Nagpur, Raigad and Kolhapur, which together make up for close to 50 percent of state GDP.

**Figure III.2: Top 10 districts on per capita income in 2016-17 (at current price)**



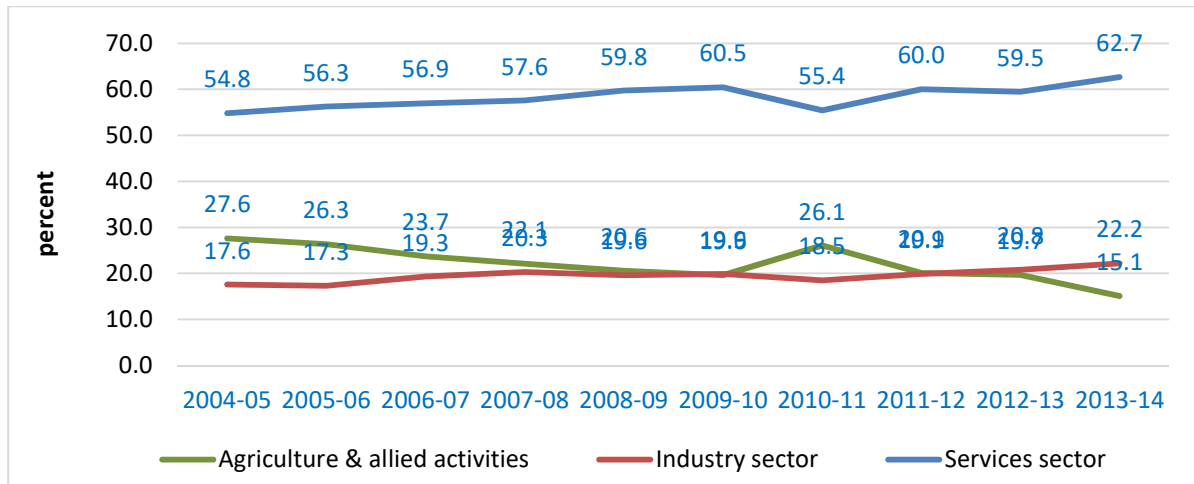
Source: Calculated from Economic Survey, 2016-17

The sectoral breakup reveals that the economy of Sindhudurg is mainly led by the services sectors (comprising trade, transport, hotels, restaurants, financial, community & personal services and public administration), of which most prominent are Trade, hotels & restaurants, and financial services. Their average shares in overall GDDP over the period of 2004-05 to 2013-14 (latest available dis-aggregated series) were 12.8 percent and 15.7 percent.

Agriculture and industrial sectors each account for about 20 percent to district GDP. Within these sectors, growing of crops and construction are respectively the main contributors.



**Figure III.3: Share of major sectors in total GDDP (%)**



Source: Calculated from Economic Survey, 2016-17

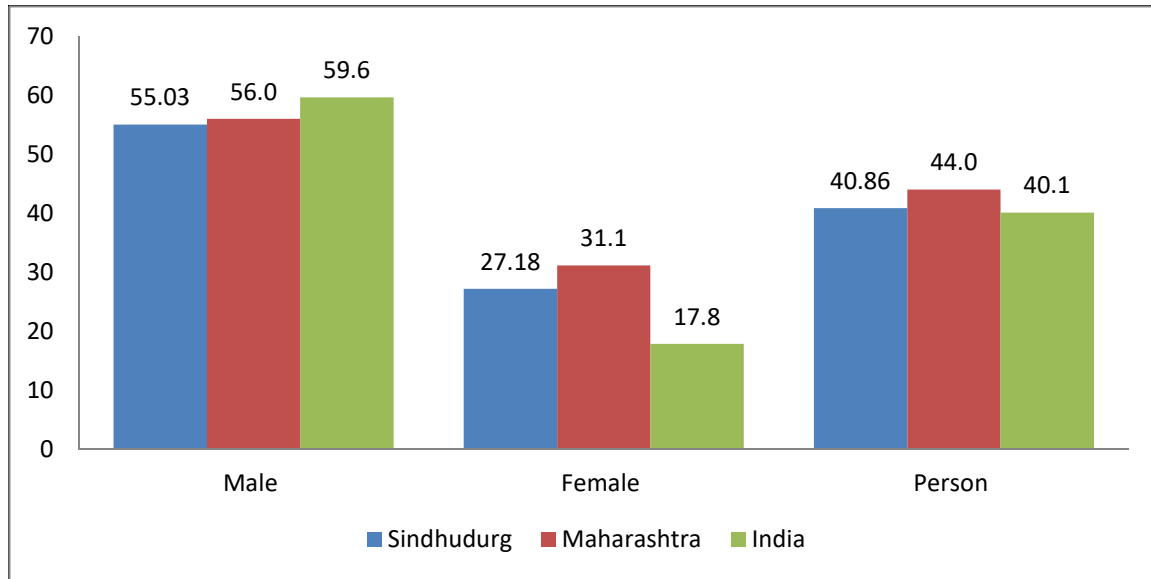
## III.2. Employment

### Work Participation Rate (WPR)

According to the Census 2011, the work participation rate of the district or the number of persons in active workforce as percent to total population, was 40.9 percent, lower than the state average of 44 percent but close to national average of 40.1 percent (Figure III.4). Female workforce participation rate is reasonably higher than the national average but lower than State average. Male participation rate, at 55 percent, is lower than both the State and national averages.



**Figure III.4: Work Participation Rate (WPR) (2011-12)**



Source: Calculated from NSS Data Round 2011-12

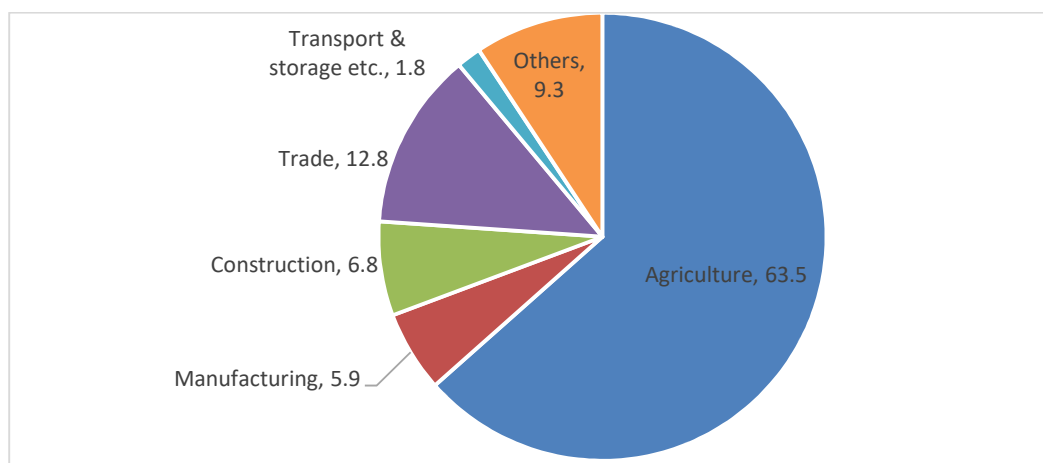
Migration is recognised as a “well-established tradition” in the district. Whereas the whole country is struggling with “missing women” due to preference for sons and discrimination against daughters, the extraordinary statistics of the district including its neighbouring district of Ratnagiri show the phenomenon of “missing men” persisting for more than a Century, according to some accounts. Migration is said to be quite common, especially for males, looking for employment in Mumbai and other regions in the State.

### Sectoral breakup

For the sectoral break-up of employment, the unit level NSS data on Employment-Unemployment was analyzed, the latest available being for 2011-12. The analysis reveals that 63.5 percent of the workforce is employed in agriculture, 12.6 percent in industry and 23.9 percent in services. Fig. (3.5) presents the distribution of workers by broad sectors.

**Figure III.5: Distribution of workers by broad sectors**





Source: Calculated from NSS Data Round 2011-12

Other key findings from the NSS data, in respect of labour-force participation, employment, unemployment rates and dependency ratios, include the following:

- According to the 2011-12 NSS estimates, the labour force participation rate of Sindhudurg is 38.9 percent. Of these, 38.7 percent are in the active workforce and the remaining are unemployed or available/willing to work.
- Of the total employed persons, only 21.9 percent are either not educated or educated till primary level. The rest are educated beyond primary education. As compared to this, as many as 40 percent of the employed persons in the entire state of Maharashtra are either not educated or educated till primary level.
- A very low proportion, 9.5 percent, of the employed persons is skilled or has acquired any kind of vocational training – formally or informally.
- About 42% of those employed, belong to the 15-35 years age-group and 49% belong to 36 - 59 years age-group.
- The unemployment rate of the district, as per NSS estimates, is very low at 0.7 percent, as compared to 1.5 percent for the state, as a whole. Unemployment rate refers to the potentially employable population and is the proportion of persons not employed but willing to work, if work is made available to them.

With only 38.7 percent of workforce participation rate in the district, the dependency ratio, that is, number of persons not working to those working is 1.59. Hence, each working person supports 1.59 additional persons, besides own self. Taking the ratio of unemployable persons (children and old) to employable persons (all persons belonging to employable age-group of 15 to 59 years), the dependency ratio works out to be low at 0.36. This means that there is adequate number of employable persons but many of them are not working.

A further dis-aggregated analysis reveals that:



- Amongst those in agriculture and allied sectors, rice cultivation is predominant. Coconut, kokum, mango and cashew are the other main crops. There is also a significant 12 percent involved in fisheries.
- Construction dominates the industry sector, food products and garments also employing a large portion of workers in the sector.
- In services, retail and wholesale trades employ a quarter whereas one in ten work in restaurants (and possibly many in the residual category too in the tourism sector).

**Table III.1: Employment break-up within broad sectors**

Sectors	Particulars	% share
Agriculture	Rice	79.9
	Coconut	5.9
	Raising and breeding of cattle	1.8
	Fisheries	12.4
	Total	100.0
Industry	Food Products	24.3
	Garments	19.6
	Manufacture of furniture	2.4
	Construction	53.7
	Total	100.0
Services	Wholesale of fruits & vegetables	10.4
	Retail sale of cereals and pulses	15.5
	Restaurants	11.1
	Others	63.1
	Total	100.0

Source: Calculated from NSS Data Round 2011-12

### III.3 Infrastructure

The socio-economic growth of any region is greatly dependent on the infrastructural facilities, both physical and soft infrastructure. In the following sections, the status of social as well as physical infrastructure in the district is presented. These are based on the Census, 2011 data, and it can be surmised that most of the indicators would have enjoyed improvements over the past 8 years.

#### III.3.1 Social Infrastructure

The access to social infrastructure (like educational and medical facilities, financial institutions, and electricity connections) is presented in Table (III.2). The indicators



show that Sindhudurg’s rural areas are far better than the Maharashtra rural average for many of the education, health and other amenities.

**Table III.2: Social Infrastructure in Sindhudurg and Maharashtra**

Particulars of Social Infrastructure	Sindhudurg			Maharashtra		
	Rural	Urban	Total	Rural	Urban	Total
<b>Education Facilities (per lakh population)</b>						
Primary schools	369.5	72.9	332.1	263.4	32.5	159.0
Other schools	139.1	92.5	133.2	96.1	52.3	76.3
Colleges/Professional Institutes	2.2	22.4	4.7	1.5	7.7	4.3
Vocational Training Institutes	-	48.6		-	14.8	
<b>Education Facilities (per village/town)</b>						
Primary schools	3.7	9.8	3.7	3.7	30.9	4.0
Other schools	1.4	12.4	1.5	1.4	49.7	1.9
Colleges/Professional Institutes	0.0	3.0	0.1	0.0	7.3	0.1
Vocational Training Institutes	-	6.5		-	14.1	
<b>Medical Facilities (per lakh population)</b>						
Hospitals/Dispensary/Family welfare centers etc.	63.3	22.4	58.1	38.4	6.5	24.0
Number of Beds	-	469.1	0.0		144.4	65.3
Number of doctors	39.0	74.8	43.5	27.1	21.8	24.7
<b>Medical Facilities (per village/town)</b>						
Hospitals/Dispensary/Family welfare centers etc.	0.6	3.0	0.7	0.5	6.2	0.6
Number of Beds		62.8	0.0		137.2	1.7
Number of doctors	0.4	10.0	0.5	0.4	20.8	0.6
<b>Financial Institutions</b>						
Financial Institutions (per lakh population)		181.3			66.2	
Financial Institutions (per village/town)		24.3			62.8	
Number of towns with Firefighting service		4.0			183.0	
Electricity - Domestic connection (per 100 household)		92.3			77.8	

“-“not available for rural areas

Source: Census of India, 2011

### III.3.2 Physical Infrastructure

- Road Connectivity**

According to Census 2011, the overall urban pucca road density (pucca road length in Km per 100 sq. km of area) of the district is 382.8. This ranges from 10.6 in Banda (CT) to 845.6 km per 100 sq. km in Sawantwadi (M CI). The State urban pucca road density is 397.3. Five of the 8 towns hence seem to have better urban pucca road density.

**Table III.3: Road Connectivity in Towns**

Town Name	Area (in sq. km)	Pucca Road Length (in kms.)	Pucca Road Density (Road length in km per 100 sq. km)	Kutchha Road Length (in kms.)
Kankavli (NP)	8.5	66.0	776.5	0.0
Kalmath (CT)	5.9	9.0	151.8	3.0



Malwan (M Cl)	6.3	39.7	630.2	10.6
Vengurla (M Cl)	13.0	50.4	387.7	0.0
Kudal (CT)	4.5	19.4	431.1	8.0
Sawantwadi (M Cl)	6.8	57.5	845.6	0.0
Majgaon (CT)	8.4	1.0	11.8	0.0
Banda (CT)	10.3	1.1	10.6	1.6
<b>District Total</b>	<b>63.8</b>	<b>244.1</b>	<b>382.8</b>	<b>23.2</b>

Source: Census of India, 2011

The inter-district road connecting the district to the northern and southern districts are under widening now, and while this seems to be a promising life-line for movement of goods and people, impressive progress is awaited. Intra-district roads reportedly fulfil the connectivity needs of the towns and rural areas.

### III.4 Household Amenities

About 30 percent of the households use tap-water (from treated and untreated sources) for drinking purpose. This proportion is almost the same in rural and urban areas. The proportion of households using treated tap-water for drinking purpose is among the lowest across all the districts of the state. For urban, in particular, this proportion is the lowest among all districts and places Sindhudurg at the last (35th) position. The main source of water for drinking purpose was reported by Census 2011, to be the well (covered and uncovered), higher in number in both rural and urban as well as higher than state proportion (14.43).

**Table III.4: Percent distribution of households by main source of drinking water**

Main Source of Drinking Water	Sindhudurg			Maharashtra			India		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Tap water	30.41	32.76	30.69	50.25	89.13	67.89	30.81	70.63	43.54
Well	62.05	62.63	62.12	24.27	2.60	14.43	13.31	6.15	11.02
Hand pump	0.83	0.57	0.80	15.70	2.83	9.86	43.63	11.86	33.48
Other Sources	6.72	4.04	6.40	9.79	5.44	7.82	12.25	11.36	11.97
<b>Total Number of Household</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: Census of India, 2011

However, under the National Rural Drinking Water Project, considerable progress has been reported. More than 96 percent of the 5,147 rural habitations, were reported to be



“Fully covered” and the remaining three percent was classified as “Partially Covered” by April 2018 (MDWS, 2018)<sup>8</sup>.

In respect of rural sanitation coverage, Sindhudurg has shown outstanding performance. Sindhudurg won the cleanest district award in terms of Sanitation in the 2016 Swachh Bharat Survey (MDWS, 2017).

### Box 3.1: Mandi and Sindhudurg found to be the Cleanest Districts in India

**Press Information Bureau  
Government of India  
Ministry of Drinking Water & Sanitation  
08-September-2016 18:49 IST**

**Mandi and Sindhudurg found to be the Cleanest Districts in India  
'Swachh Survekshan' for rural areas released by the Ministry of Drinking Water & Sanitation**

The Minister, Ministry of Drinking Water and Sanitation, Rural Development and Panchayati Raj, Shri Narendra Singh Tomar, today released the 'Swachh Survekshan' for rural India, revealing Mandi (Himachal Pradesh) and Sindhudurg (Maharashtra) as the cleanest districts in India. A total of 22 hill districts and 53 plain areas were assessed under the Gramin Swachh Survekshan launched in May 2016. Mandi was judged as the cleanest district in “Hills” category and Sindhudurg as the cleanest in the “Plains” category, with districts of Sikkim, Shimla (Himachal Pradesh), Nadia (West Bengal) and Satara (Maharashtra) featuring at the top of the index.

The Ministry had commissioned Quality Council of India (QCI) to carry out the assessment. Each district has been judged on four distinct parameters. Maximum weightage was placed on accessibility to safe toilets and water. The parameters to judge sanitation status include:

- Households having access to safe toilets and using them (toilet usage, water accessibility, safe disposal of waste) (40%)
- Households having no litter around (30%)
- Public places with no litter in the surrounding (10%)
- Households having no stagnant wastewater around (20%)

The assessors appointed by QCI individually visited all districts covered under the Survekshan to make a comprehensive analysis of the on-ground situation & progress.

Overall Ranking - Swachh Survekshan Gramin				
Category	Rank	District	State	Cleanliness Score
Hills	1	Mandi	Himachal Pradesh	98.4
Hills	2	West Sikkim	Sikkim	96.4
Hills	3	Shimla	Himachal Pradesh	94.1
Plains	1	Sindhudurg	Maharashtra	96.8
Plains	2	Nadia	West Bengal	95.0
Plains	3	Satara	Maharashtra	92.9

Source: <http://pib.nic.in/newsite/PrintRelease.aspx?relid=149633>, accessed on Dec 08 2018.

Over 80% of the rural households in Sindhudurg still use firewood as type of fuel for cooking. This proportion is 18 percent in urban areas. Use of LPG in rural areas is only 14%. Nevertheless, this proportion is higher than national average of 11.4%. Only 6.5 % of the Sindhudurg households use other sources for cooking, which includes kerosene, electricity, bio-gas, crop residue etc. These indicators are likely to have changed with

<sup>8</sup> [https://indiawater.gov.in/IMISReports/Reports/Profile/rpt\\_DistrictProfile.aspx?Rep=2](https://indiawater.gov.in/IMISReports/Reports/Profile/rpt_DistrictProfile.aspx?Rep=2), accessed on Dec 09 2018



the implementation of national programmes for making available LPG cylinders to households.

In table III.5, number of villages electrified under Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) in different blocks of the district is shown. Kudal has the highest number of villages electrified. However, Dodamarg has lowest numbers of villages electrified under DDUGJY.

**Table III.5: Number of villages electrified in Sindhudurg district under Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) (as on December 2018)**

Block	Villages Covered	Villages Completed
Devgad	97	72
Dodamarg	24	23
Kankavli	65	61
Kudal	118	115
Malwan	121	65
Sawantwadi	70	67
Vaibhavvadi	58	35
Vengurla	65	63
<b>Total</b>	<b>618</b>	<b>501</b>

Source: Official Website of DDUGJY ([http://www.ddugjy.gov.in/portal/dcompleted\\_11p2.jsp?stcd=27](http://www.ddugjy.gov.in/portal/dcompleted_11p2.jsp?stcd=27) accessed 12/11/2018)

**Table III.6: Percent distribution of households by type of fuel used for cooking**

Type of Fuel used for Cooking	Sindhudurg			Maharashtra			India		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Fire-wood	80.2	18.4	72.8	68.9	10.8	42.6	62.6	20.1	49.0
LPG/PNG	14.0	70.1	20.7	17.9	74.1	43.4	11.4	65.0	28.5
Others	5.8	11.4	6.5	13.2	15.1	14.1	26.0	14.8	22.5
<b>Total number of Household</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: Census of India, 2011

### III.5 Ownership of assets

An analysis of use of banking services and ownership of assets for households in Sindhudurg shows that:

- About 63 percent of the household in Sindhudurg avail banking services, somewhat lower than 69 percent average for Maharashtra but higher than national average of 58.7 percent.
- Television ownership is high across rural and urban parts of the district, comparable to the Maharashtra average and better than the national ownership.



- Vehicle ownership and telephone connectivity lags State and national averages.
- More than a quarter of of the rural households do not report owning any asset – this is much higher than the State and national averages.

**Table III.7: Percent households availing banking services and owning types of assets**

Item	Sindhudurg			Maharashtra			India			
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total	
<b>Availing banking services</b>	61.36	79.54	63.54	62.95	76.02	68.88	54.43	67.77	58.69	
<b>Ownership of Assets</b>										
<b>Radio/Transistor</b>	7.92	8.58	8.00	12.15	28.28	19.47	17.32	25.31	19.87	
<b>Television</b>	43.91	78.03	48.01	37.91	79.45	56.76	33.37	76.70	47.22	
<b>Computer/Laptop</b>	<b>With Internet</b>	1.25	5.15	1.71	0.84	11.74	5.79	0.71	8.27	3.12
	<b>Without Internet</b>	5.32	10.56	5.95	3.94	11.86	7.53	4.44	10.40	6.35
<b>Telephone/Mobile Phone</b>	<b>Landline only</b>	9.18	7.09	8.93	5.25	7.51	6.27	3.12	5.93	4.02
	<b>Mobile Only</b>	43.66	59.22	45.53	45.03	64.16	53.71	47.94	64.33	53.18
	<b>Both</b>	8.63	18.57	9.82	4.38	14.74	9.08	3.28	11.74	5.98
<b>Bicycle</b>	17.37	33.75	19.34	30.24	30.77	30.49	46.16	41.94	44.81	
<b>Scooter/Motorcycle/Moped</b>	15.09	40.30	18.12	18.54	32.63	24.93	14.34	35.24	21.02	
<b>Car/Jeep/Van</b>	3.72	10.35	4.52	2.40	10.13	5.91	2.26	9.75	4.65	
<b>households with TV, Computer/Telephone, Mobile phone and Scooter and Car</b>	1.90	10.87	2.97	1.34	14.35	7.24	1.05	12.23	4.62	
<b>None of Assets</b>	27.73	7.81	25.34	29.76	5.98	18.97	22.90	7.02	17.82	
<b>Total number of households</b>	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	

Source: Census of India, 2011



## IV. SECTORAL PERFORMANCE & CHALLENGES

This Chapter discusses the three broad economic sectors of the district – Agriculture and allied activities, Industry and Services. For each sector, a broad overview is presented, followed by a description of the identified potential areas or activities within each sector. These activities have been identified on the basis of secondary data research and consultations with the district stakeholders. These activities promise to deliver additional impetus to the overall district economic growth. Further, the Strengths, Weaknesses, Opportunities and Threats (SWOT) of each potential area has been presented.

### VI.1 Opportunities in Tourism

In order to promote tourism in Konkan region the Government of Maharashtra has declared Sindhudurg district as 'Tourism district' (GOM, 1997). The district has been endowed with great natural beauty with its long beautiful seashore, picturesque mountains and lush green forests. Wild animals like Leopard, Wild cats, Rabbits, Wild Hen and sometimes Wild Buffaloes are also spotted in the winter season. The Kunkeshwar in Sindhudurg is known for its lush dense forests. The forest looks dark even during the day time and it has species of wild boars, poisonous snakes, wild leopards and panthers. Vengurla is well-known as a bustling trade center during its golden past, but lost its eminence over time. Vengurla though still has huge warehouses, godowns, markets and trading centres, and the town has been attracting tourists in recent years due to its beauty and beaches.

Chivala beach is a C-shaped beach in Sindhudurg, with white sands and clear water. It is very small, calm and serene beach. Tarkarli beach is a narrow stretch of beach which is situated at the convergence of the Karli River and the Arabian Sea. This beach is famous because of its transparent clear water. Tarkarli beach is also known as 'Queen Beach' of Sindhudurg. Tourists also get to savour the famous Malvani cuisine during their visit to Tarkarli and other beaches in the district. Tondavali beach is another beautiful beach with fine grains of soft white particles. Tondavali beach is generally deserted but has a refreshing touch. Mithbav beach is located in Devgad taluka at Mithbav village, and is a white sand beach with clear blue sea, suitable for swimming. Scuba-diving is being promoted in certain locations in some of these beaches and coastal areas.

The Kunkeshwar temple is an ancient Shiva temple, also surrounded by a beach with a long stretch of seashore and white sand. This temple is also known as the "Kashi of South Konkan". Sagarshwar beach is another beach characterized by a huge stretch of



shiny silvery sand dunes with crystal blue waters. A small temple of Sagareshwara (Lord of the Sea) is located on the beach. The beach is bordered by casuarina plantations that provide hospitality and pleasure to the tourists.

Recognised as the “Paradise on Earth” part of Konkan region and the western coast, and because of her high green cover, Sindhudurg was declared the country’s first eco-tourism district in 1997. The Tourism promotion strategy emphasized the natural beauty, coastal beaches, ancient forts, old temples, unique culture, special cuisine and the road and rail links with Goa and Bombay. But the potential of tourism remains hitherto unrealized.

Table IV.1 presents the baseline and projected tourist arrivals for the different tourist destinations. Sawantwadi, Tarkarli, Malvan are projected to have more tourism prospect than Kunkeshwar and Devgad. The table IV.1 also highlights that Malvan attracts highest inflow of tourists in the district, indicating the increasing attraction of people towards the Sindhudurg fort and beautiful beaches in the Malvan area.

**Table IV.1 Sindhudurg tourist arrivals: 2001-02 and projected 2021-22**

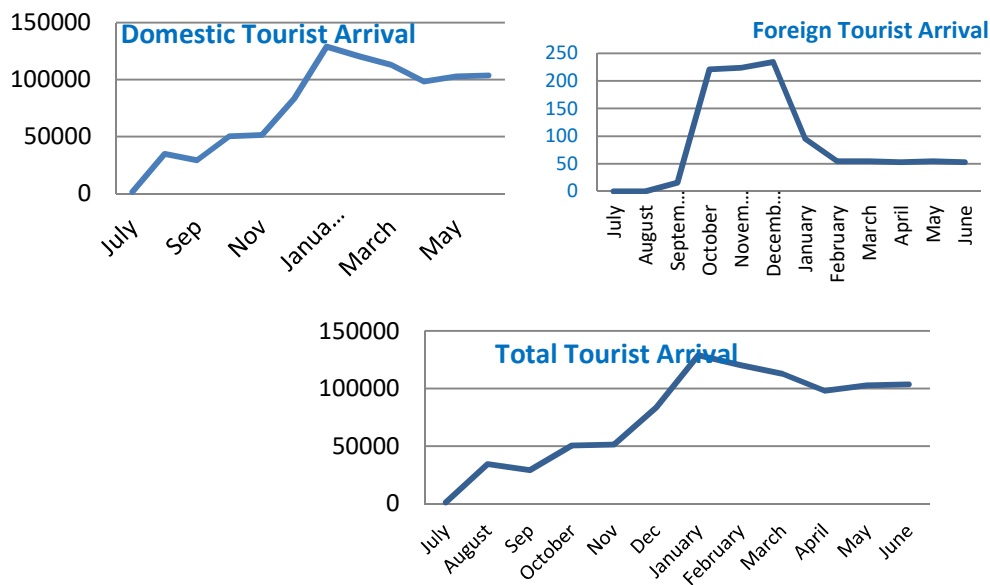
Destination	Tourist Inflow per year		Overall CAGR
	2001-02	Estimated 2021-22	
Amboli	35,000	102,986	5.54%
Sawantwadi	50,000	186,352	6.80%
Tarkarli	75,000	269,079	6.60%
Malvan	200,000	641,427	6.00%
Kunkeshwar	35,000	76,689	4.00%
Devgad	35,000	90,237	4.85%

Source: District Tourism Master Plan Sindhudurg, Maharashtra Year 2013-2033

According to month-wise Tourist arrivals in Sindhudurg district, December and January is the peak months for foreign and domestic tourists. However, domestic tourists flow is higher during first half of the year, and the small foreign tourists flow is reported only during the winter months.



**Figure IV.1: Month wise tourist arrival in Sindhudurg**



Source: Tourism Survey for State of Maharashtra, Ministry of Tourism, Govt. of India

The State Tourism Dept. commissioned tourism plans to be prepared in 1998 by Tata Consultancy Services (TCS). The integrated plan focused on three tourism circuits. The Expert Committee appointed by government of Maharashtra suggested modifications and the Sindhudurg regional plan covered tourists centres, day –visit points and areas that could be developed as tourist villages. The district tourism master plan has considered these plans and the proposals suggested for the district under 20 Year Tourism Perspective Plan of Maharashtra prepared by Dalal and Associates. The focus of this master plan is on development of tourism sites other than religious sites. Few religious sites that are very famous and attract large number of pilgrims, are being considered for better infrastructure provision. The large coastline presents numerous beaches, most of which are extremely good and among the best in the country. However, since it is impossible to develop all the beaches together, phasing of development has been suggested.

### Major Challenges in Tourism

After more than twenty years of being declared as a Tourism district, Sindhudurg appears to have a number of constraints, some of which are list below:

- *Lack of Infrastructure, particularly in tourist areas:* the absence of adequate services like rail, road and air transportation, good intra-district and city roads, water and sanitation, public transport and reliable electricity have constrained the tourism industry. Tourists are also deprived of a good network of hotels, banking services, poor signages and tourist information, and a lack of tourist operators.
- *Existing tourism products are underutilized:* even though there are good locations naturally, and some that have been developed to some extent, their potential has not



been systematically harnessed. Examples are beaches like Chiwla, bhogwe, Nivti, Velaghar etc. green tourism at Amboli, water sports and Dhamapur Lake and Crawford market Vengurla, and so forth.

- *Limited Integration of Local Communities:* leading to opportunities lost for realizing the benefits of tourism for local people. The exposure and training to local people on how to promote and manage tourism has been limited and larger operators seek to maximize the potential in areas like Goa and Karnataka.
- *Tourism has been inadequately resourced and funded:* despite declaring this as a Tourism district, govt. funding made available to provide infrastructure and promote tourism has been vastly unequal to that required to harness the district’s potential. Even when plans were drawn up, these were not funded well or prioritized for implementation. The local communities and their leaders have also not been able to embrace tourism as a preferred economic activity leading to resistance when private enterprise proposed tourism projects. On the one hand, mobilization of land for tourism projects has run into problems, whereas the zealous implementation of Coastal Zone regulations, has prevented beach-based projects from taking off as in say, neighbouring Goa.

**SWOT Analysis**

An analysis of the strengths, weaknesses, opportunities and threats to the development of tourism in Sindhudurg is presented in Table (IV.2).

**Table IV.2 Sindhudurg Tourism: A SWOT Analysis**

<b>Strengths</b>	<b>Weaknesses</b>	<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Declared as Tourism District and close to International tourist destination Goa</li> <li>• 121 km coast-line, many scenic and calm beaches, and four major sea ports in Vijaydurg, Devgad, Malvan and Vengurle.</li> <li>• Good road connectivity with construction and widening of NH 17</li> <li>• Varied tourist attractions like religious places, beaches, creeks, forts, adventure sports locales, waterfalls, forest wealth, heritage, monuments etc.</li> <li>• Good rail connectivity with major cities of India</li> </ul>	<ul style="list-style-type: none"> <li>• Road connectivity and condition needs improvement</li> <li>• Poor marketing and promotion of tourism in the district.</li> <li>• Lack of hotel, eating houses and other tourism facilities and wayside amenities to cater to different tourist segments</li> <li>• Low awareness and poor perception of tourism among local stakeholders</li> <li>• Poor accessibility to many tourist destinations</li> <li>• Unfavourable brand image as a tourist friendly destination.</li> <li>• Poor telephone and internet</li> </ul>	<ul style="list-style-type: none"> <li>• Diverse mix of tourist spots that can be promoted to provide a complete tourism experience</li> <li>• High returns to developing a Coastal High Way</li> <li>• New airport completed at Chipi, Vengurle</li> <li>• Potential for stops for tourists travelling from Mumbai and Pune to Goa.</li> <li>• Potential for water-based tourism, adventure sports and related recreation</li> <li>• Eco-Tourism potential along with employment for local communities and forest/nature-based tourist circuits</li> <li>• Potential to lure existing tourist arrivals (e.g. visiting Amboli</li> </ul>	<ul style="list-style-type: none"> <li>• Competition from Ratnagiri and Goa with developed beaches and mature tourism industry</li> <li>• Public investments may not fructify if local communities oppose tourism development because of demands of large tracts of land and/or man-wildlife conflicts or perceptions of increased law and order problems, and cultural problems</li> <li>• Private sector may not be willing to invest unless govt. underwrites some of the risks</li> </ul>



<b>Strengths</b>	<b>Weaknesses</b>	<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Mango and cashew cultivating region.</li> <li>• Rich tradition in handicrafts</li> <li>• Colourful fairs and festivals</li> </ul>	connectivity, and sparse banking services	Hills and Sindhudurg fort) to other destinations in district <ul style="list-style-type: none"> <li>• Tourism based on Alphonso / Hapus mangoes, cashew-nuts, and aqua-culture, etc.</li> </ul>	

Source: NCAER Analysis 2018

## VI.2 Opportunities in Mango and Cashew

### Overview of Agriculture

The economy of the district is mainly dependent on agricultural sector, with about 60 percent persons engaged in agricultural activity. The gross cropped area is 1, 67,000 hectares and gross irrigated area is 20,000 hectares. A large part of the land holdings in the region, almost 74 percent, are held by small and marginal farmers. The district receives good rainfall with an average of 3,287 mms, which gives way to the land being conducive to growing various crops. The key crops grown in the district are rice, coconut, kokam, mango and cashew.

Moreover, the growth of mango and cashew leads in agro-based processing in the district. Apart from this rice production is also significant in the district and a clear trend of increase is observed over the period of 2009-10 to 2016-17 (table IV.3). It was revealed during primary studies in the district that the rice-milling industry is under-developed in the district resulting in rice being transported to neighbouring districts like Kolhapur for milling.

**Table IV.3: Production of Some major crops in Sindhudurg (in million tons)**

<b>Year</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>
Rice	162728	198199	201193	199964	191693	201549	182172	199397
Nachni/Ragi/ Nagli	4572	3552	3547	2298	2754	2657	3048	2641
Other Cereals	0	352	151	0	0	695	695	1
Tur (Red Gram Pigeon pea)	11	0	11	0	0	83	83	894
Udid (Black gram)	186	112	97	23	25	107	107	14.06
MungGreen Gram	37	20	20	5	4.5	112	112	48.2
Other Pulses	223	516	615	74.6	78	170	170	870.23
Ground nuts	4933	3777	3543	797.7	792	2547	2547	555.05
Sunflower	0	129	18	0	0	24	24	0
Sesame	65	65	17	20.3	23	8	8	11.14
Other Oilseeds	466	273	42	21.1	23	91	91	11.14
Sugarcane	0	16	27	42720	44856	86495	56700	107720
Other Spices	0	259	97	499	540	16355	16355	879.75

Source: Directorate of Economics and Statistics, Maharashtra, Govt. of Maharashtra (Annual reports)

Table IV.4 presents the area under different crops in Sindhudurg district. In terms of area under crops also rice has highest area under crops in Sindhudurg district but that



seems to be decreasing over time. The area under Mango nearly doubled from 17205 hectare to 31517 hectare during the period from 2002-03 to 2016-17. Cashew and banana, spices are some other crops, which show increase in area under cultivation over this period.

**Table IV.4: Area under different crops (in Hectare)**

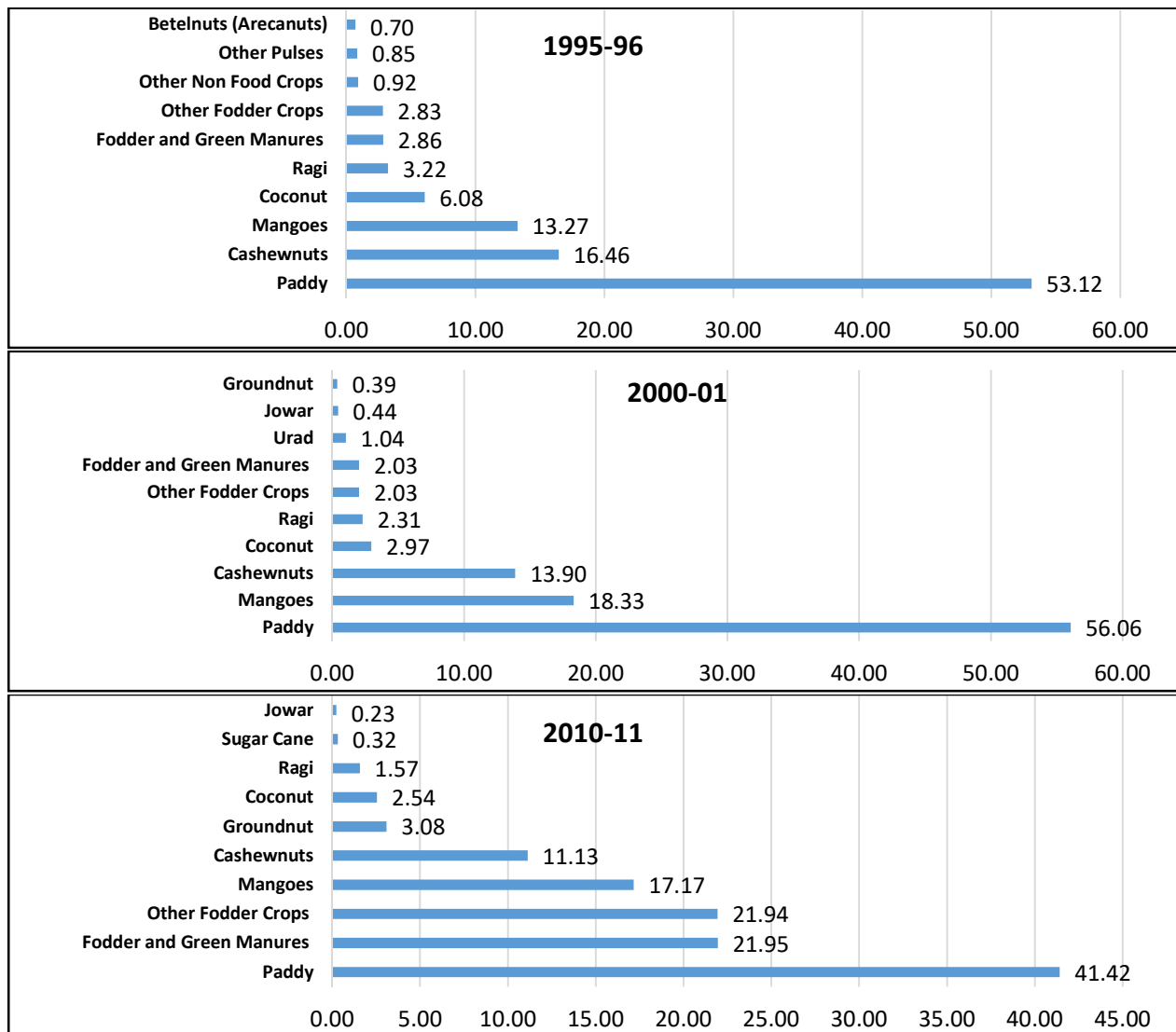
Year	2002-03	2013-14	2014-15	2015-16	2016-17
Rice	78866	67643	61820	61870	60410
Maize	108	0	61	57	160
Wari	200	0	0	0	0
Nachani	2722	1626	1701	1860	1488
Tur	4	0	57	1310	746
Moong	469	72	72	80	65
Udid	582	74	69	61	71
Kulith	4499	1605	1381	470	1345
Wal	794	0	47	39	0
Wathan	2299	301	327	342	375
Sugarcane	11	1520	1338	1260	1714
Chilli	311	80	83	92	29
Garlic	0	0	0	0	0
Other Spices	803	750	5520	5264	3520
Mango	17205	29620	31363	31517	31517
Citrus fruits	0	42	41	41	16
Banana	78	366	346	400	465
Other fruits	37276	78167	80930	81335	114488
Onions	9	55	55	66	61
Brinjals	106	217	121	113	204
Other Vegetable	621	175	659	638	1013
Ground nuts	4794	745	1103	1130	795
Other Oil seeds	8896	23	24	28	90

Source: Directorate of Economics and Statistics, Maharashtra, Govt. of Maharashtra (Annual reports)

Considering the soil quality and the climatic condition of the district, like the neighbouring district of Ratnagiri, the district has huge potential for Mango and Cashew nuts. Despite having huge potential, the district economy seems to be not able to take benefits from these cash crops. As shown in figure IV.2, despite being consistent, in terms of area under cultivation, cashew, mango and coconut cultivation have not shown a secular trend of persistent increase due to a number of climatic and market-based factors (discussed later).



**Figure IV.2: Percentage share of top ten crops by area in Sindhudurg district**



Source: NCAER calculation from Agriculture Census, Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare

Agriculture being monsoon dependent and due to lack of better livelihood opportunities, Konkan, the coastal Maharashtra has traditionally been an underdeveloped agricultural region. Due to mountainous or coastal geography, large developmental projects like industry and infrastructure development have also had limited scope. However, the region is bestowed with soils and climate suitable for crops like cashew, mango, coconut and coir, etc. The world famous Alphonso variety of Mango has been grown and promoted in Konkan since many generations and has been the back bone of orchard based economy. Later, the improved varieties of cashew nut developed by Agricultural Universities, also found a place in the economy and were accepted by local communities as a commodity with promise of production and processing to serve markets far and wide. Over time, livelihoods in the region have been dependent on Mango and cashew based economy, amply supported by Govt. subsidies. The benefits



of the subsidy based orchard developments could not be accrued by all due to many constraints.

There are concerns that most of the Mango and cashew orchards are subsidy driven and developed at the cost of biodiversity rich forests that are located mostly on private lands, and hence at the mercy of land-owners who are lured by the apparent attractive gains in the short-run but run the risk of failures and falling returns if not careful.

As identified by the Secondary analysis and validated the field visits in the district, two main cash crops are Mango and Cashew nut. The agriculture officers recommend strengthening the marketing system for these cash crops including the Agriculture Produce Market Committees (APMCs) and other marketing channels. Farmer will need to be trained to produce good quality raw material for the processing units too. According to the marketing Strategy Supplement (MSS) for Ratnagiri District under the World Bank-assisted Maharashtra Agricultural Competitiveness Project<sup>9</sup>, the district required two primary intervention *viz.* improving extension support to farmers, and improving the agricultural marketing system. The report also mentions that because of heavily focusing on increasing agricultural productivity, market-led extension has been lacking and this has resulted in a poor understanding of agricultural marketing by the concerned departmental agencies and the producers.

### IV.2.1 Mango

In Maharashtra, Konkan region is the major contributor of mango cultivation, occupying an area of about 1.65 lakh ha with production of 2.47 lakh tons and the average productivity is around 2.50 tons per ha. The region is characterized by humid, sub-tropical and monsoonal climate which is very much favourable for growing plantation crops. The soils mostly belong to laterite and lateritic, derived from basaltic, granite and gneiss rocks in Sindhudurg district. Mango is grown on scattered hill slopes having wide variations. The district is also famed for the unique taste of Alphonso mangoes. Devgad taluka is famous especially for Alphonso mangoes. In addition to Alphonso, other varieties like Mankur, Payari and Karel mangoes are found in abundance in the district. Considering the demand for mangoes for the domestic and export markets, there appears to be scope for expansion of area under this crop in near future.

### Geographical Indication (GI) Tag to Alphonso (2018)

In October 2018, the Alphonso mango from Sindhudurg and Ratnagiri received the Geographical Indication (GI) tag, certifying that it has a specific geographical origin and possesses qualities or reputation that are due to the geographical origin. The Alphonso is prized in domestic and international markets for its taste, fragrance and vibrant

<sup>9</sup> [http://macp.gov.in/sites/default/files/user\\_doc/Ratnagiri%20MSS.pdf](http://macp.gov.in/sites/default/files/user_doc/Ratnagiri%20MSS.pdf)



colour, and is one of the world's most popular fruits. It is exported to various countries, including Japan, Korea and Europe.

An import ban imposed in 1989 by the United States on Indian mangoes, including the Alphonso, was lifted only in April 2007. The ban was imposed on the argument that the mangoes needed to be treated before entering the country in order to stop the introduction of non-native fruit flies, destructive fungi, and other pests that could harm American agriculture. The European Union imposed a ban beginning in April 2014 on import of mangoes after finding "non-European fruit flies" in some consignments, creating a significant threat to UK salad crops. The Indian government had described this decision as arbitrary and businesses claimed they would suffer financial losses due to the ban. In January 2015, the European Commission lifted the ban following significant improvements in the Indian mango export system.

Stakeholder's interactions under this Study revealed that the "export potential of mango is also recognized but there is a lack of skills and knowledge regarding the international food standards and specifications. Therefore, people from the district concentrate mainly on the domestic market. Support in terms of training and educating the people is strongly recommended."

The positive impacts of GI system includes: structuring of the supply chain around a common product reputation, increased and stabilised prices for the GI product, added value distributed through all the levels of the supply chain, preservation of the natural resources on which the product is based, preservation of traditions and traditional know-how, linkages to tourism etc. These need to be realized by implementation of necessary practices and systems.

### Challenges in Mango cultivation

Mango farmers in Maharashtra's coastal districts of Ratnagiri and Sindhudurg, report challenges of production alongside depressed market rates. In the last five years, increased pest attacks, abnormal changes in the temperatures, and excessive use of fungicides and other chemicals have led to a dip in yields. Wholesale market statistics in the State suggest a declining trend in arrivals. In 2012, 3.4 lakh tonnes of mango reached the market, but in 2017 it has been just 15,602 tonnes. The reason have been inter alia:

- The flowering and fruit-setting cycles have been disrupted by temperature rise, humidity, pest attack and use of chemical fungicides that has affected its production.
- There is stiff competition in Konkan region for mango growers due to heavy promotional measures undertaken by the district marketers. The problem of mango farmers has been further compounded by arrivals Alphonso look-alikes from Karnataka; the fruit looks similar to Alphonso, but tastes very different. In large markets such as Mumbai, Navi Mumbai and Pune, mangoes from



Karnataka are deceptively branded as Ratnagiri or Sindhudurg Alphonso and retailed.

- There are already few mango processing units in Sindhudurg making processed items like Mango sorbet, ice cream, lassi, soufflé, mousse, and puree. However alphonso mango is mostly used here for table purpose and not for processing and therefore efforts should be made to set up more mango processing units in the districts to improve its profitability and potential.

An analysis of the strengths, weaknesses, opportunities and threats to the development of mangoes in Sindhudurg is presented in Table (IV.5).

**Table IV.5 Sindhudurg Mangoes: A SWOT Analysis**

<b>Strengths</b>	<b>Weaknesses</b>	<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Alphonso Mango has distinguished qualities due to Morphological, Physio-chemical as well as genetic level.</li> <li>• Alphonso received the GI tag, certifying the specific geographical origin and possesses qualities or reputation.</li> <li>• There are some mango processing units in the district and several mango products are delivered all over India and exported to European and other countries.</li> </ul>	<ul style="list-style-type: none"> <li>• Alphonso look-alikes from other states of the country and abroad</li> <li>• Manipulation of prices by the middleman /suppliers cause producers to suffer market-based losses</li> <li>• Lack of an organized system for production and harvest marketing</li> <li>• Lack of knowledge about GI tag among farmers and consumers.</li> <li>• No separate market <i>mandi</i> for Alphonso</li> <li>• Lack of upgradation in inputs like pesticides</li> <li>• Lack of proper common storage facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Export potential especially if adherence to safety and quality norms can be achieved</li> <li>• GI tag can help enhance the tourism of the region.</li> <li>• Potential for inter-cropping with spices that can double the benefits for the farmers</li> </ul>	<ul style="list-style-type: none"> <li>• Deforestation to cultivate mango trees might result in reduced forest cover.</li> <li>• Changing weather patterns have resulted into onset of pests on mango further contributing to decrease in production.</li> <li>• Vulnerability to climate variabilities due to subsidy-led promotion of cultivation leading to productivity fluctuations and forests' loss</li> </ul>

### IV.2.2 Cashew Nuts

The cashew nut, a native of Brazil was introduced by the Portuguese to India during 16th century<sup>10</sup>. Cashew trees can thrive in hot humid regions. Therefore cashew cultivation are mostly distributed in countries near the equatorial region and near coastal areas.

In 2015-16, India reported 10.34 lakh ha under cultivation, an estimated production of 6.70 lakh tons. Maharashtra is the highest Production State with 2, 20,000 tons in 2015-16, followed by Andhra Pradesh and Odisha at 95,500 and 80,500 tons respectively. The total area under cashew cultivation in Maharashtra is 1.60 lakh ha of which more than 80 per cent (1.30 lakhs ha.) is in the South Konkan region of Maharashtra, mainly in Sindhudurg and Ratnagiri district.

<sup>10</sup> [http://www.cashewinfo.com/pdf/Geographical\\_Distribution\\_of\\_Cashew.pdf](http://www.cashewinfo.com/pdf/Geographical_Distribution_of_Cashew.pdf)



## Challenges and Potential

In Sindhudurg, non-availability of labour on time, high wages, and problems of pest and diseases are reported as the most common problems faced by farmers. However, some of the seasoned producers opine that farmers have not been able to keep abreast of developments in cashew production practices, and improved processing technologies necessary for shorting up yields.

Most of the cashew producers in Ratnagiri and Sindhudurg districts are small producers and they are unorganized. As a result of the promotion by the government programmes that subsidized cashew production, a number of small cashew processing units also mushroomed but those had not the requisite investments or knowledge. Therefore, even though the area under cashew increased for some time, the quality parameters declined and poor processing further compromised the returns from the market.

Cashew nut cultivation provides employment to more than 5 lakh people both directly and indirectly, particularly in the rural areas of Sindhudurg district. The production period of cashew is from 6th to 40th year after plantation. Raw nut, cashew kernels and cashew nut shell liquid (CNSL) are the three main cashew products while the cashew apple is generally processed and consumed locally in Sindhudurg district.

An analysis of the strengths, weaknesses, opportunities and threats to the development of cashew cultivation and processing in Sindhudurg is presented in Table (IV.6).

**Table IV.6 Sindhudurg Cashew: A SWOT Analysis**

<b>Strengths</b>	<b>Weaknesses</b>	<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Temperature, soil, rainfall and humidity are the competitive strength of the region for cashew cultivation.</li> <li>• Maharashtra is the second in cultivated area under cashew, and Sindhudurg one of the main producing areas with established processing units, market linkages, and availability of credit and subsidies.</li> <li>• Innovations of different cashew varieties by Regional Fruit Research Centre, Vengurla.</li> <li>• Major area under cultivation is naturally organic. Wild flora and fauna – area blessed with variety of aromatic and medicinal plants. This assist in retaining quality of cashew.</li> </ul>	<ul style="list-style-type: none"> <li>• Most producers are small and unorganized. Fragmented land and land litigation mars development of cashew.</li> <li>• Rapid growth of area but attention to quality production, processing, and market linkages not commensurate leading to losses.</li> <li>• Lack of R&amp;D in cashew apple unitization.</li> <li>• No direct export facilities for cashew at the district level.</li> <li>• Lack of timely availability of cheap labour</li> <li>• Insufficient infrastructure for storage and marketing.</li> <li>• Poor transportation facilities in small villages.</li> <li>• Middleman lobby</li> <li>• Lack of strong political representation of cashew farmers and processors.</li> </ul>	<ul style="list-style-type: none"> <li>• Scope for increasing processing unit, if the cold storage and other facilities are improved in the district.</li> <li>• All parts of the cashew tree can be used as product or by-product. Leaves, apple, cashew shell and cashew kernels can be utilized with different method.</li> <li>• High export potentiality</li> <li>• Possibility of area expansion under fruit crops, spices, aromatic and medicinal plants</li> <li>• Scope for Cashew Apple Liquor Industry</li> <li>• Contract Farming / Cooperative Farming</li> <li>• Value addition &amp; Processing in Clusters</li> </ul>	<ul style="list-style-type: none"> <li>• Mismatch of production and processing seasons - need to import raw cashew from Africa and South East Asia, etc.</li> <li>• The cheaper raw cashew import from other countries hurts local production.</li> <li>• Lack of labour both in cultivation and processing of cashew.</li> <li>• Subsidy-driven cashew promotion may result in loss of forest and biodiversity since forest are on private lands</li> <li>• Changing weather patterns have resulted into onset of pests on cashew further contributing to decrease in production.</li> </ul>



### IV.2.3. Fisheries

(A review of the industry status in the district is provided in later section. Since activities holding promise for economic development are reviewed, fisheries and coir products are assessed in the sections below.)

The district has a coastline of 121 kilometers providing ample opportunities for fisheries. There are 8 main fish-landing centres in Sindhudurg, namely Vijaydurg, Devgad, Achara, Malvan, Sarjekot, Kochara, Vengurle and Shiroda. The population of fisherfolk in the district was reported to be 25,365 persons, 34 fisheries cooperative societies, and annual fish production at 27,283 metric ton<sup>11</sup>.

Fish is a staple food for about 95 per cent of the total population of Sindhudurg. It provides quality food and sustainable income. Out of the 8 Talukas in Sindhudurg 3 talukas are actively involved in fishing. There are 526 mechanized vessels in the district, engaged in fishing operations (ICAR- CMFRI, 2010) and 317 trawlers reported to be. Out of total fish catch of 1647 MTs, around 90% is consumed locally (PLP, 2008-09). There is one processing unit in private sector at Tarkarli which undertakes canning and salting of fish. One more unit with modern technologies and export orientation is coming up at Kudal to process sea-food products. There is good scope for processing of low value fish catch which goes as waste and many times thrown by fishermen back into sea. Small processing facilities upto 0.5 MT per day by group of fish farmers could be set up at the investment of about Rs.4 lakh per unit at about 5 to 6 places in coastal blocks of Vengurla, Malvan and Devgad. Sindhudurg district has three major fish markets at Devgad, Chambar Bhati and Jamsande that offers significant marketing functionaries and trade.

**Table IV.7: Inland Fishery 2009-10 to 2016-17, Sindhudurg**

Years	Length of river (in Kms)	Suitable Area for Fishing (lakes, ponds etc.)		Total Area Brought Under Fishing (In Hectare)	Production of Inland Fish (in MT)	Total amount received By Producer for Fish catches (Rs. In Lakhs)	Seed Used for Fisheries (In Lakhs)	Co-operative fishery Societies	
		Numbers	Total Area (in Hectares)					Numbers	Number of members
2009-10	248	23	492.08	401.21	8.58	1.72	6.8	6	239
2010-11	248	23	494.81	297.16	5.4	2.45	10.8	6	239
2011-12	248	23	494.81	279.72	10.31	6.7	7.02	6	239
2012-13	248	23	492.76	341.06	4.65	3.03	6.83	7	264
2013-14	248	24	1421.46	1327.76	7.05	4.93	16.2	3	309
2014-15	248	22	1365.54	1292.56	7.49	5.63	11.32	7	434
2015-16	248	23	1718.06	1718.06	4.5	1.88	6.67	3	309
2016-17	248	23	1718.06	1718.06	5.47	1.88	8.45	3	309

Source: Directorate of Economics and Statistics, Maharashtra, Govt. of Maharashtra (Annual reports)

<sup>11</sup> Comprehensive District Agriculture Plan (C-DAP), District Sindhudurg, Department of Agriculture, Sindhudurg [[http://krishi.maharashtra.gov.in/Site/Upload/Pdf/sindhudurg\\_cdap.pdf](http://krishi.maharashtra.gov.in/Site/Upload/Pdf/sindhudurg_cdap.pdf) accessed on 29/11/2018]



Tables IV.7 and 4.8 highlight the key features of the fishery sector in Sindhudurg district. Total area under inland fishing has increased during the period from 2009-10 to 2016-17. However, the production of inland fish has reduced from 8.58 MT in 2009-10 to 5.47 MT in 2016-17. In coastal fishery too, production has been fluctuating and during the period from 2009-10 to 2016-17 it has increased from 20,136 MT to 22,305 MT.

**Table IV.8: Costal Fishery 2009-10 to 2016-17, Sindhudurg**

Years	Length of Costal Area	Production of fisheries (in metric tons)	Marine Fishing Boats		Fish landing Centers	Fisheries Cooperation Societies	
			Total	Mechanized Fishing boats		Numbers	Number of Members
2009-10	121	20136	3330	2165	34	29	22167
2010-11	121	23719	3496	2184	34	26	23719
2011-12	121	24563	3348	1895	34	26	23719
2012-13	121	26749	3348	1895	34	26	23719
2013-14	121	27283	3505	2046	34	29	27807
2014-15	121	21560	2140	1498	34	33	27838
2015-16	121	17699	2202	1504	34	29	27807
2016-17	121	22305	2406	1633	34	29	27807

Source: Directorate of Economics and Statistics, Maharashtra, Govt. of Maharashtra (Annual reports)

While a good number of people are engaged in fisheries, the district has not made any significant inroads into various aspects of fish processing and value addition. This is a traditional skill that most locals possess, and this makes this a sector with potential.

The problems of fisheries sector however are not insignificant:

- Many fishing communities are poor, and their status low in the social hierarchy. These communities have not had access to the formal education.
- Job mobility is almost absent and there is no visible income from non-fishing activities.
- Basic services like water, electricity roads, medical services, housing, banking etc., are not available to fishing communities.
- The local traditional fisherman is getting marginalized due to commercial trawlers and purse seine<sup>12</sup> net fishing.
- The number of ‘Rapan Sangh’ (group of traditional fisherman) and members in it has decreased considerably in the last decade. Fishing grounds are neither mapped nor regulated, leaving the stakeholders unaccountable. (Ujjani,2014)

An analysis of the strengths, weaknesses, opportunities and threats to the development of fisheries in Sindhudurg is presented in Table (IV.9).

<sup>12</sup>Seine fishing is a method of fishing that employs a fishing net called a seine that hangs vertically in the water with its bottom edge held down by weights and its top edge buoyed by floats. Purse seine uses a line to pass through the rings at the bottom of the net, to prevent the fish from escaping. (Wikipedia, [https://en.wikipedia.org/wiki/Seine\\_fishing](https://en.wikipedia.org/wiki/Seine_fishing), accessed Dec 12, 2018).



**Table IV.9 Sindhudurg Fisheries: A SWOT Analysis**

Strengths	Weaknesses	Opportunities	Threats
<ul style="list-style-type: none"> <li>The district is known for its long coast line and convenient harbours, together with its comparative nearness to the Arabian Coast. * Fishing industry in the district is mainly dependent upon the exploitation of marine resources, and the indigenous population of fisherfolk are skilled in fishing.</li> <li>Existing fish-processing units in the private sector have demonstrated the economic viability of fishery-based industries in the region</li> </ul>	<ul style="list-style-type: none"> <li>Unorganized character of fisheries sector, with little infrastructure, equipment, training and skilling support to the fisherfolk.</li> <li>Lack of basic services, facilities and infrastructure for poor fisherfolk</li> <li>Major trawler activity (including illegal fishing) that is left unregulated</li> <li>Lack of economical cold storage facilities</li> <li>Government schemes provide subsidy support for diesel, financial support to buy boats, cold storage and market development but implementation has not been effective.</li> <li>Infrastructure facilities like boat repairing centre, diesel pump, toilets, water supply, arrangement for supply of ice, market for local sale, cold storage system and other requirements for fishing activity have not been provided in the landing points.</li> <li>Non-availability of Effluent Treatment Plant (ETP) reduces the capacity of the fish processing unit.</li> </ul>	<ul style="list-style-type: none"> <li>Employment generation potential along with providing nutritional security.</li> <li>High export potential of the processed fish.</li> <li>Since women are mostly involved in this sector, its development will contribute to their welfare.</li> <li>Fish are available in the deep sea, may be possible to harvest sustainably if proper training, equipment, and facilities are made available to fisherfolk / societies.</li> </ul>	<ul style="list-style-type: none"> <li>Lack of effluent treatment might increase the water pollution in the region due to fish-processing.</li> <li>Excessive fishing by trawlers and use of purse seine net, may result in unsustainable over-fishing</li> </ul>

### IV.3. Coir Industry

Even though coconut has a prime position as a plantation crop in the country, it faces many problems like vagaries of nature and markets, and sudden outbreak of pest and diseases. The coconut palm is attacked by a number of insect pests at all stages of its growth. The coconut palm has been attacked by 200 insects and noninsect pests (Rabindra, 2000). Among these, the rhinoceros beetle, red palm weevil, black-headed caterpillar, eriophyid mite and rats are serious pests and found in many coconut gardens in Konkan region of the Maharashtra.

According to the consultations held with district stakeholders, coir in this area appears to have less potential than Kerala due to a number of reasons, including the fact that coconut plants are smaller in number and highly dispersed. Nevertheless, they also recommended developing some ornamental goods from coconut that could have employment potential and tourist attraction. The profit margins of the coconut ornaments are also reasonably high.



**Table IV.10: Coconut Production (2009-10 to 16-17) in Sindhudurg district**

Years	Per Hectare Produce (in kgs)	Total Produce (in tons)	Percentage change to previous year
2009-10	NA	NA	NA
2010-11	59	NA	NA
2011-12	8850	9.29	NA
2012-13	8900	9.35	0.6
2013-14	9600	9.78	4.6
2014-15	9150	10.98	12.3
2015-16	0	0	-100
2016-17	9300	9.77	-11

Source: Directorate of Economics and Statistics, Maharashtra, Govt. of Maharashtra (Annual reports)

Table IV.10 presents the coconut production in Sindhudurg district from 2009-10 to 2016-17, and shows leveling-off in the last four years.

According to Coir Board, MSME, Govt. in India<sup>13</sup> “Coir is a natural fibre that’s extracted from mesocarp tissue, or husk of the coconut. As this fibre is golden in colour when cleaned after removing from the coconut husk, it’s popularly known as ‘The Golden Fibre’. Coir has been traditionally used as yarn and rope, and for floor coverings like mats and mattings. It is hard and strong, resistant to rot, moulds and moisture. Its diverse products include coir carpets, tufted mats, garden articles, geo textiles, doormats, area rugs, coir mats etc.”

The total production of coir in the world is 350,000 tonnes and India accounts for more than two-thirds of the world production of coir and coir products<sup>14</sup>. Indian state of Kerala produces 60 percent of the world’s supply of white fibre and Sri Lanka produces 36 percent of the world’s brown fibre output<sup>15</sup>. The major coconut-growing states and union territories in India are Kerala, Tamil Nadu, Andhra Pradesh, Karnataka, Maharashtra, Goa, Orissa, Assam, Andaman & Nicobar, Lakshadweep and Puducherry. Being a cottage industry, coir industry has lots of scope for growth in Indian economy.

Since 2001, rising Chinese demand for coir, an expanding market for coir-based erosion control products, and the spread of coir pith as a peat moss substitute in horticulture resulted in higher production and prices<sup>16</sup>. However, to sustain and/or expand the market for coir industry as employer for the rural poor, there are requirements to innovate production, improve product consistency and in particular develop novel applications which is jointly with their customers in importing countries. Also there should be some necessary steps towards modernisation of the coir industry to boost productivity and ensure uniformity of coir rolls in the export market.

<sup>13</sup> [http://coirboard.gov.in/?page\\_id=60](http://coirboard.gov.in/?page_id=60)

<sup>14</sup> Coir Exports: On the Growth Path, [<http://efy.efymag.com/admin/issuepdf/coir-oct09.pdf> accessed on 29/11/2018]

<sup>15</sup> *ibid*

<sup>16</sup> <https://www.thehindubusinessline.com/economy/agri-business/Coir-Vast-scope-for-growth/article20343954.ece> [accessed on 29/11/2018]



An analysis of the strengths, weaknesses, opportunities and threats to the development of coir in Sindhudurg is presented in Table (IV.11).

**Table IV.11 Sindhudurg Coirs: A SWOT Analysis**

Strengths	Weaknesses	Opportunities	Threats
<ul style="list-style-type: none"> <li>• Coir is a labour intensive industry, and will generate employment for local populations.</li> <li>• Majority of coir workers in the district are women and they will gain differentially by development of the industry</li> <li>• Availability of reasonable quantity of raw material i.e. husk</li> <li>• Market potential in domestic and foreign markets</li> <li>• Eco-friendly product</li> <li>• Presence of supporting institutions in India e.g. Coir Board</li> <li>• Low investment required in machinery, etc.</li> <li>• Established marketing channels for fibre</li> </ul>	<ul style="list-style-type: none"> <li>• Power cut in Sindhudurg coir factory is a major issue. Due to this, unit runs at a loss paying wages more than production.</li> <li>• Lack of skilled manpower</li> <li>• Lack of value added products for market expansion</li> <li>• Lack of formal networks for marketing and input procurement</li> </ul>	<ul style="list-style-type: none"> <li>• Growing demand in the domestic and international market.</li> <li>• Strategic location as it is well connected with roads and other communication system</li> <li>• Proximity to Mumbai, Pune and Goa markets</li> </ul>	<ul style="list-style-type: none"> <li>• Competition from synthetic fibres</li> <li>• Utilization of husk as firewood</li> <li>• High power tariff</li> <li>• Shortage of skilled workers</li> <li>• Competition from Kerala coir clusters</li> </ul>

## IV.4 Industry

There are two industrial areas in Sindhudurg district (as on August 2012), namely, MIDC Area Kudal and Sawantwadi Co-operative Udyamagar Ltd, Majgaon<sup>17</sup>. Micro and small enterprises in Sindhudurg are categorised into agro based, readymade garments and embroidery, wood/wooden based furniture, rubber, plastic & petro based, mineral based, metal based (steel fab), engineering units, electrical machinery and transport and repair & servicing etc. Large scale industries include Tata Metaliks and Uttam Galva Steel & Power.

The major mineral found in the district of Sindhudurg are Iron ore, Bauxite, Silica sand, Dolomite, China clay, Fire clay, Feldspar, Graphite. Major exportable item are manganese, iron & bauxite and processed fish. There is no medium scale enterprise.

**Table IV.12: Total No. of enterprises in the District**

Micro	Small	Medium
226	8	0

Source: Industrial State Profile of Maharashtra – 2016-17

As of 2010-11, the number of industrial units registered in Sindhudurg was 79 providing employment to 1,557 workers and accounted for an investment of Rs. 12411.25 Lakh (Table IV.13).

<sup>17</sup> <http://www.dcmsme.gov.in/dips/State%20Profile%20Sindhudurg.pdf>



**Table IV.13: Industrial Units Registered in the district**

Year	Number of Registered Units	Employment	Investment (Lakh Rs.)
2010-11	79	1557	12411.25

Source: Brief Industrial Profile of Sindhudurg District, Ministry of MSME, Mumbai

Although the number of agro-based enterprises is low in Sindhudurg, mango and cashew based units hold a lot of promise. Apart from these, coir, fish and milk processing also offer potential in the district. Cashew being an emerging industrial as well as agricultural cash crops has been contributing to the economy of neighbouring districts like Ratnagiri and state of Goa. Although Sindhudurg has not yet achieved the success as the neighbouring region, but people of the region and also government has taken lots of initiatives for growth of this sector in recent time. Further, giving GI tag and already favourable soil and climate for Alphonso has potential not for agriculture but also for processing industries. Considering the soil and climatic similarities between Ratnagiri and Sindhudurg, it can be said that focusing on both cashew and mango for industrial and agriculture will be beneficial for the economy of the district.

**Table IV.14: Existing micro & small enterprises and artisan units in Sindhudurg**

Nic code no	Type of industry	Number of units	Investment (lakh rs.)	Employment
20	Agro based	22	481	252
26	Ready-made garments and embroidery	90	496	342
27	Wood/wooden based furniture	60	158	278
28	Paper & Paper Products	2	6	21
31	Chemical/Chemical based	6	112	37
30	Rubber, Plastic & Petro based	42	863	333
32	Mineral Based	60	458	226
33	Metal based (Steel Fab)	225	934.6	1476
35	Engineering units	4	117	36
36	Electrical machinery and transport equipment	17	164	100
97	Repairing & servicing	13	29	64
01	Others	249	1625	1721

Source: Brief Industrial Profile of Sindhudurg District, Ministry of MSME, Mumbai

Since Sindhudurg was declared as a Tourism district, there are only a limited number of red category industries.

**Table IV.15: Details of Industrial Zones of Sindhudurg**

Year	Types of Industries			Total
	Red	Orange	Green	
2011-12	22	219	258	499
2012-13	22	219	258	499
2013-14	31	257	292	580
2014-15	25	222	291	538
2015-16	25	222	291	538
2016-17	25	222	291	538

Source: Directorate of Economics and Statistics, GOM



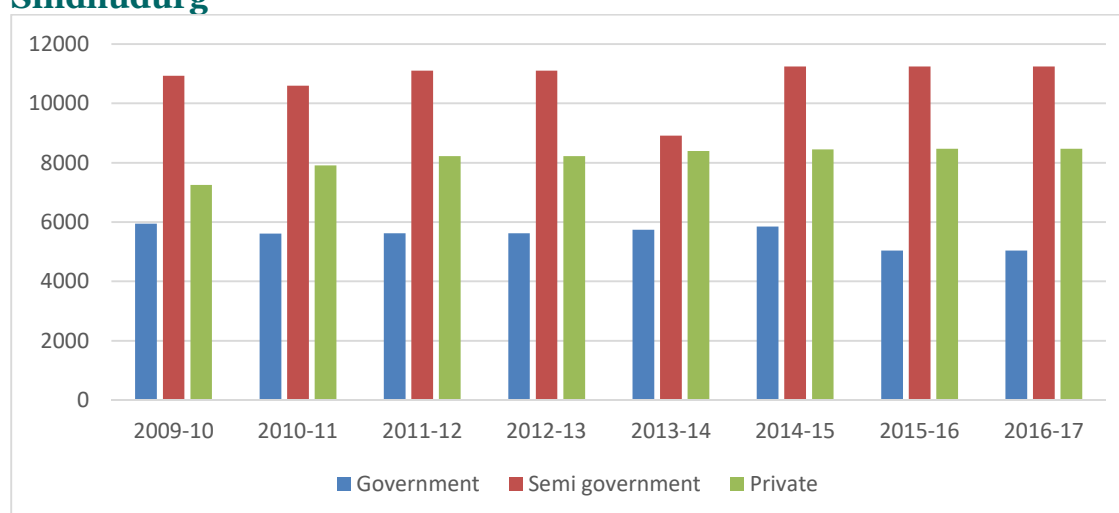
Employment in semi-government units is highest, followed by private sector units.

**Table IV.16: Employment Available With Different Industries in Sindhudurg**

Year	Total no. of Establishment	No. of establishment providing information	No. of employee			
			Government	Semi government	Private	Total
2009-10	429	212	5946	10931	7252	24129
2010-11	481	369	5609	10598	7908	24115
2011-12	504	302	5621	11099	8224	24944
2012-13	504	302	5621	11099	8224	24944
2013-14	599	206	5740	8914	8394	23048
2014-15	598	142	5850	11240	8452	25542
2015-16	612	163	5038	11246	8476	24760
2016-17	612	163	5038	11246	8476	24760

Source: Directorate of Economics and Statistics, GOM

**Figure IV.3: Employment available with different industries in Sindhudurg**



Source: Directorate of Economics and Statistics, GOM

### Large Scale Industries/Public Sector Undertakings in Sindhudurg

There are only two large-scale unit in the district, 1. Tata Metalliks, At Redi, Tal.Vengurla, 2. Uttam Steel & Power, (Under Implementation) At Satarda, Tal. Sawantwadi. Another large investment (Saudi Aramco) has been proposed but progress is not clear.

**Uttam Steel & Power:** Shree Uttam Steel and Power has received environmental clearance for its Rs 13,196-crore expansion project in Sindhudurg district of Maharashtra. The company has proposed raising production capacity of its integrated



steel plant to 3 mtpa from 1.5 million tons per annum (mtpa) and captive power plant capacity to 3x50 mw from 2x50 mw in the existing area in Sindhudurg. It may be noted that the company had plans for expansion in 2010, but could not proceed due to imposition of moratorium on consideration of projects in Ratnagiri and Sindhudurg districts. The moratorium, however, was lifted in 2014. Shree Uttam Steel and Power Ltd (SUSPL) has signed a memorandum of understanding (MoU) with the government of Maharashtra for setting up a steel manufacturing facility and a captive power plant at an estimated investment of Rs 11,156 crore. The project envisages a steel unit with a capacity to produce 1.5 million tons per annum (mtpa) of hot rolled (HR) coils along with a 40 MW captive power plant at Sindhudurg district in Maharashtra.

**Tata Metaliks:** A subsidiary of Tata Steel, Tata Metaliks has its state-of-the-art manufacturing plant at Kharagpur, West Bengal, India which produces the finest quality of pig iron and ductile iron pipes in India. Details of the plant in Sindhudurg are being sought by the team.





## V. HUMAN RESOURCE AND INSTITUTIONAL CAPACITY

This chapter briefly recapitulates the key characteristics of the human resources in the district, and educational and training institutions available.

### Literacy Rate

- According to 2011 census, 85.56 percent of the district population is literate which is higher than state average of 82.34 percent.
- Male literacy rate is 91.58 percent and female literacy rate is 79.81 percent.
- Sindhudurg district ranks 8<sup>th</sup> in terms literacy in the state.
- The gap between male and female literacy in 2011 has come down to 12.5 percent from 19.0 percent in 2001.

### Occupational Structure

- According to 2011 census, total workers in the district were 40.86 percent of which 26.66 percent are main workers, and 14.20 percent were marginal workers.
- Male workers are 55.03 percent which is lower than state male worker average (56%) and female workers are 27.18 percent which is lower than state female worker average (31.06%)
- 35.95 percent of the workers are cultivators in the district and this is higher than the state average (25.43%). Male cultivators are 33.09 percent and female cultivators are 41.54 percent in the district.
- 23.57 percent are agricultural labourers, 2.79 percent are workers in household industry and 37.70 percent are other workers.

### Educational Institutions

As per DES data, Sindhudurg district has 1512 primary school, 211 secondary schools and 55 higher secondary schools in Sindhudurg district.



**Table V.1: Number of Schools - Absolute and Percentage**

Primary Schools	No. of Schools					Percentage No. of Schools				
	Government Schools	Local Body Schools	Private Aided Schools	Private Unaided Schools	Total	Government Schools	Local Body Schools	Private Aided Schools	Private Unaided Schools	Total
2009-10	1	1474	23	21	1519	0.07	97.04	1.51	1.38	100.00
2010-11	0	1476	21	21	1518	0.00	97.23	1.38	1.38	100.00
2011-12	1	1476	21	21	1519	0.07	97.17	1.38	1.38	100.00
2012-13	1	1474	21	34	1530	0.07	96.34	1.37	2.22	100.00
2013-14	0	1470	21	2	1493	0.00	98.46	1.41	0.13	100.00
2014-15	0	1468	21	3	1492	0.00	98.39	1.41	0.20	100.00
2015-16	0	1462	21	35	1518	0.00	96.31	1.38	2.31	100.00
2016-17	0	1455	21	36	1512	0.00	96.23	1.39	2.38	100.00

Source: Directorate of Economics and Statistics, Maharashtra, Govt. of Maharashtra (Annual reports)

In 2016-17, total number of secondary school is 220, of which 25 private unaided, 194 private aided and only one government secondary school.

**Table V.2: Number of Secondary Schools - Absolute and Percentage**

Secondary Schools	No. of Schools					Percentage No. of Schools				
	Government Schools	Local Body Schools	Private Aided Schools	Private Unaided Schools	Total	Government Schools	Local Body Schools	Private Aided Schools	Private Unaided Schools	Total
2009-10			192	19	211	0.00	0.00	74.55	25.45	100.00
2010-11	1	0	193	18	211	0.00	0.00	77.78	22.22	100.00
2011-12	1	39	193	19	212	0.00	0.00	76.36	23.64	100.00
2012-13	1	0	194	9	206	1.41	0.00	83.10	7.04	100.00
2013-14	1	0	193	19	213	1.52	0.00	71.21	27.27	100.00
2014-15	1	0	194	25	220	1.39	0.00	58.33	40.28	100.00
2015-16	1	0	194	25	220	1.35	0.00	56.76	41.89	100.00
2016-17	1	0	194	25	220	1.33	0.00	56.00	42.67	100.00

Source: Directorate of Economics and Statistics, Maharashtra, Govt. of Maharashtra (Annual reports)

Total number of higher secondary school in the district in 2016-17 is 75, with only one Government school, 42 private aided and 32 private unaided higher secondary school.



**Table V.3: Number of Higher Secondary Schools - Absolute and Percentage**

Higher Secondary Schools	No. of Schools					Percentage No. of Schools				
	Government Schools	Local Body Schools	Private Aided Schools	Private Unaided Schools	Total	Government Schools	Local Body Schools	Private Aided Schools	Private Unaided Schools	Total
2009-10			41	14	55	0.00	0.00	74.55	25.45	100.00
2010-11			42	12	54	0.00	0.00	77.78	22.22	100.00
2011-12	0	0	42	13	55	0.00	0.00	76.36	23.64	100.00
2012-13	1	0	59	5	71	1.41	0.00	83.10	7.04	100.00
2013-14	1	0	47	18	66	1.52	0.00	71.21	27.27	100.00
2014-15	1	0	42	29	72	1.39	0.00	58.33	40.28	100.00
2015-16	1	0	42	31	74	1.35	0.00	56.76	41.89	100.00
2016-17	1	0	42	32	75	1.33	0.00	56.00	42.67	100.00

Source: Directorate of Economics and Statistics, Maharashtra, Govt. of Maharashtra (Annual reports)

**Table V.4: Number of applications received and number of students admitted at starting of the year in different institutes**

Year	Type of Institution													
	I.T.I.		Polytechnic		M.C.V.C.		Science faculty		Commerce faculty		Arts faculty		Other	
	Received	Admissions	Received	Admissions	Received	Admissions	Received	Admissions	Received	Admissions	Received	Admissions	Received	Admissions
(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
2009-10	3500	3500	2119	2119	6540	6540	0	0	0	0	0	0	0	0
2010-11	2116	983	693	349	-	893	-	1019	-	2250	-	2196	-	1535
2011-12	2604	915	1011	346	1315	1285	2474	3771	1986	4389	2695	5081	2559	4086
2012-13	2952	1017	1167	336	1449	1373	2204	1352	5220	3555	4680	2793	1860	1088
2013-14	2358	1049	1090	336	1422	1296	NA	2285	NA	3532	NA	2690	NA	563
2014-15	1962	997	744	260	1272	1216	3732	2475	4343	3521	3904	2465	2965	2170
2015-16	2492	1085	556	394	1031	802	5363	3316	5297	3752	4611	2426	736	548
2016-17	2015	892	622	359	1146	831	5262	2451	7906	5729	7556	3471	560	3319

Source: Directorate of Economics and Statistics, Maharashtra, Govt. of Maharashtra (Annual reports)

Overall, the district appears to have a reasonably good educational infrastructure and indicators of literacy are high too. This provides a good base for running skilling and training programmes for the local population. However, the high incidence of migration by male workers, may mean that along with the selected sectors, training, skilling and entrepreneurship development activities may have to be crafted to target population segments, e.g. women, who are likely to gain by either improving their work performance or coming into the work-force as a result of training.



## V.1. Skill development initiatives in Sindhudurg

### • Training programme for gem & jewellery sector at Sindhudurg:

The Gem & Jewellery Export Promotion Council (GJEPC), the apex body for the gem and jewellery trade in India, set up by the Ministry of Commerce and Industry, organized a skill building training programme for gem & jewellery sector at Sindhudurg. Considering the proximity of Ratnagiri and Sindhudurg to Goa, a gem & jewellery development in this region can substantially contribute to the exports. GJEPC has plans to set up Common Facility Centres (CFCs) in 13 identified clusters of the gem and jewellery in India. The Council has already set up Common Facility Centres at Amreli, Visnagar and Palanpur in Gujarat. They are in the process of setting up a Common Facility Centre in Sindhudurg for which they are doing capacity building programme amongst local traders. GJEPC has also identified that around 5000 women from Sindhudurg region would like to get trained in imitation and tribal jewellery. Such training programmes would be a step towards empowering the women in this region.

### • Employment Exchange Registration

Maharashtra makes second largest contribution to India's population – thus becoming a large contributor to the India's demographic dividend. The Government of Maharashtra has set itself up a target of generating 4.5 crore skilled manpower by 2022. In order to achieve this target, 45 lakhs skilled manpower shall need to be produced every year by the state for 10 years.

Mahaswayam portal integrates skilling, employment and entrepreneurship in an effort to make this a go to portal for various stakeholders involved in Skill India Mission. Maha stands for Maharashtra and Swayam stands for one's self. It is an effort by the State Government to bring together students, youth, job seekers, employers, trainers and entrepreneurs all under one umbrella. Mahaswayam portal has been developed by the Skill Development & Entrepreneurship Department to integrate the skill related activities in Maharashtra with Jobs and Entrepreneurship for providing a unique platform to all the stakeholders. This portal will provide single interface to all the stakeholders to obtain information related to Skill Training, Job vacancies and Entrepreneurship development programs. The portal is not only aiming towards providing information on employment opportunities, skill enhancement and empowering youth of the state but is also leaving no stone unturned in bringing together the job seekers, job providers and other stakeholders on one common platform<sup>18</sup>.

### • Jana Shikshan Sansthan (JSS)

Birth of JSS, Sindhudurg has the distinction of being the first ever JSS in a rural area in the country. Mr. Suresh Prabhu, then Member of Parliament of the area, diligently

<sup>18</sup> Employment Exchange Registration, Sindhudurg, [<https://sindhudurg.nic.in/en/service/employment-exchange-registration/> accessed on 29/11/2018]



pursued the issue of implementing the “Shramik Vidyapeeth” scheme for the rural masses. In April 2000, rural areas were granted a Shramik Vidyapeeth with a new name: ‘Jana Shikshan Sansthan’ (JSS). The core objectives of the Scheme were: (1) Low cost training in demand driven employability skills Development self-employment avenues for utilizing local resources. (2) Literacy and life enrichment education. (3) Women’s empowerment and equality. (4) Health camps. (5) Environmental and AIDS awareness. (6) Entrepreneurship development (7) Exhibitions of products made by beneficiaries. (8) Street plays on different themes. (9) Population studies. (10) Information about Government schemes. The focus of the scheme are to improve the occupational skills & technical knowledge of the neo-literates through skill development programs, to organize training and orientation courses for key resource persons and master trainers on designing, development & implementation of skill development programs, to Organize equivalency programs through the Open Learning System and to promote national goals such as secularism, national integration, population and development, women’s equality, protection and conservation of environment. Apart from this the specific services offered under this scheme is tailoring, beauty and hair care, nursing assistant, anganwadi/ balwadi teacher, wireman, security guard, electrical repairs, welding & fabrication, air conditioning, two wheeler repairing, watch repairing, hair cutting saloon etc.

Presently eight blocks of Sindhudurg districts are active and three blocks of the neighbouring district Ratnagiri. It has also covered few pockets from the Goa state and has established sub-centres to transports vocational training to the remotest corner of the district. Moreover, every year more Than 2500 beneficiaries are trained, experienced faculty from local area roped in, evaluation by external examiners, certificate to successful candidates, assistance provided for (1) marketing of products, (2) getting loans/subsidies from financial institutes.





## VI. RECOMMENDATIONS

This Chapter summarises the recommendations and suggestions that flow from the analyses in the foregoing Chapters.

### VI.1. Recommendations for improving Tourism

Despite being bestowed with scenic beaches and rich culture and cuisine, the district has not capitalized on its “Tourism District” status due to poor local support to tourism, infrastructure and investments, lack of development and marketing, and local leadership not as yet ready to embrace tourism as a welcome and desirable economic activity. This is also in part due to the relative comfort and low poverty levels in the district. The following steps may be considered for giving an impetus to tourism development:

- **Tourism District Promotion:** while tourism promotion activities have been taken up, these have not borne fruit due to the disconnect between the potential and local perceptions and aspirations. Such an alignment is possible if local private enterprise, and urban and rural community stakeholders are taken into confidence in developing and implementing responsible and eco-sensitive tourism action plans, that conserve local cultures, environment, and promote local livelihoods. Exposure to other national/global practices in promoting such tourism will be beneficial as will be following of proper consultative processes in development of Greenfield projects.
- **Infrastructure development** is the primary requirement of the tourism industry in the district. Improvement in the mode of travel – road/rail/airways is the primary requirement to develop the industry. This will also need to include better availability of banking, ATMs and forex facilities.
- To **attract foreign tourists** to Sindhudurg district, locations and experiences will need to be curated and positioned to be visible on international-tourist map.
- **Improvement of quality of tourist infrastructure and services** including greater number and variety of accommodation, eating houses, way-side facilities, and overall improvement in hygiene and cleanliness etc.
- **Improvement of communication facilities**, including easy access to telephones/ fax/ internet etc. and the availability of trained guides conversant with English and foreign languages. Also, better provision of signages and information kits.
- Attracting a higher number of **tour operators establishments** to have local spokes.
- **Improvement of security and safety systems;** better facilities’ management like parking, site cleanliness and pilgrim management, etc.
- **Development of environmentally sensitive tourism** that also generates employment for local communities and does not exacerbate the man-animal conflict.



**Sustainable rural tourism development in Sindhudurg:** can be developed in partnership with local communities with core competency in handicrafts, handlooms and culture, especially that are close to existing destinations and circuits. The objective should be to identify tourism sector as an important avenue for employment and income generation at local levels in Sindhudurg. Rural tourism including home-stays, and eco-tourism are emerging trends, promoting this segment of tourism will inculcate a sense of pride among the local population, with the benefits of extra income and employment.

- Malvani branding: Training and promotion of Konkani cuisine and Food Processing: Sindhudurg has its own speciality in the foods and beverages that can be promoted strongly with a ‘Malvani’ branding. Tandalachi Bhakari (Rice flat Bread), Fish fry, Bangda, coconut water, Kulhdache Pithale (Vetch sauce), Kokam sarbat (Mangosteen Juice), vadhesagoti, sol Kadhi, these are the some important foods. Mango, Cashew-nuts, Jackfruits, are the important fruits in the Sindhudurg. There is potential for promoting Konkani cuisine and impart training and food-processing to create/extend the market for the Konkani products.i
- Passenger cruise ship services can be considered for tourism attraction. As it has already been launched from Mumbai to Goa, there are also scope to develop this kind of services in Sindhudurg.
- Agency to local administration to promote tourism and attract private sector: some stakeholders suggest that the State department is unable to facilitate tourism services promotion and regulation, at local levels. Hence, while strategic planning and infrastructure development may have to be their remit, attracting private sector, finding local-population based innovations and solutions, and local level planning and services regulation may be better discharged if entrusted to local administration and private sector agencies.

## VI.2. Recommendations for promoting Mangoes

In order to protect local farmers from market and production losses, and to protect the unique feature of the Alphonso mango the area, proposed initiatives include:

- Cluster formation for mango cultivation for harmonizing production.
- Awareness programmes for production and professionalized marketing among the farmers.
- Awareness about GI tag for the farmers so that they understand the GI rights and opportunities available for them.
- Separate *Mandi* for Alphonso mango in district/region
- Marketing awareness is essential in and outside the district.



- Devgad is specific place for mango cultivation, so there should be some market development in Devgad for mango, which will also add value to tourism.
- The existing pesticides have become immune for pests, so there are demands for development of regimen for improved pest management and other inputs.
- Common storage facilities for Mangos on priority in distributed locations.
- Adoption of Ultra- High Density Plantation (UHDP): to improve per acre productivity and also increase the annual income of farmers and simultaneously decrease the quantity of water used per kilo of mango produced.

**Box 6.1: Ultra-High density Plantation (UHDP)<sup>19</sup>**

**Ultra High Density Mango Plantation**

1. Under UHDP, Mango is planted at 3x2 m which accommodates 674 plants per acre.
2. Mango can be grown in a wide range of soils except clayey or extremely sandy or rocky calcareous, alkaline or water logged soils. It prefers a soil pH 6.5 to 7.5.
3. Pit should be marked at 3x2 m before pit digging and pits of 1x1x1m are to be dug at marked places.
4. Alternatively one meter deep and one meter wide trench can be prepared at every three meter. The pits should be allowed to weather for some weeks before filling media.
5. The media consist of 40-50 kg soil, 0.5 -1.0 kg SSP, 0.25 kg neem cake, 20 kg compost, and 10-15 g of Thimet.
6. Plantation is to be raised by using grafted sapling. Epicotyl grafting is recommended for UHDP as the training of the tree starts at a very early stage itself.
7. The bamboo support is essential to newly planted grafts.
8. UHD method of cultivation involves continuous pruning once the saplings reach 1-1.5 m height.

Hindustan Coca Cola Beverages Pvt.Ltd. and Jain Farm Fresh Food Ltd. has launched Project Unnati, – a unique partnership with farmers to demonstrate and enable adoption of Ultra-High Density Plantation (UHDP) practice for mangoes. The Project will encourage sustainable, modern agricultural practices and help double mango yields, thereby increasing the income of farmers. UHDP is a farming practice that leads to mango orchards attaining their full potential in 3-4 years and also allows nearly 700 trees to be planted in an acre instead of the conventional method of planting 60 trees in an acre. This will improve per acre productivity and also increase the annual income of farmers and simultaneously decrease the quantity of water used per kilo of mango produced. The program will use specialized buses with in-built classrooms to provide training at farmer's doorstep regarding UHDP techniques in mango farming which can help farmers double their mango yields and thus significantly improve their livelihood. The project has an investment outlay of more than 50 crores, shared equally between HCCBPL and JFFFL. This project is operational in 3 southern states of India – Andhra Pradesh, Tamil Nadu & Karnataka.

**How Project - Maha Unnati is helping Farmers:**  
**Application of Jain Gap (Good agricultural practice) on farmer's field:** With the application of Jain Gap JFFFL is trying to help farmers to increase their productivity, lower operating cost and minimize wastage of pesticide/ insecticide. Agronomical support is being provided to the farmers with the help of agronomist appointed by JFFFL. Total 13840 farmers will be covered under this project and UHDP mango will be planted in 25000 acres in next 10 years. To help farmers in UHDP mango production, we provide soil water analysis at our chittoor laboratory to farmers. Better planting material is provided which is also disease free.

<sup>19</sup> Unnati-A joint sustainable agriculture initiative by jain farm fresh foods ltd. And Hindustan coa cola beverages pvt.ltd [ <http://www.jainfarmfresh.com/unnati/> accessed on 11/10/2018]

## VI.3 Recommendations for promotion and improvement of cashew

- Promotion of cashew production and processing on a cluster basis: has been done in some locations, and stakeholders suggested more organized functioning in clusters brings benefits to producers, labourers as well as for processing and marketing.
- Some suggested testing of contract farming can be solution for small and unorganized producers of cashew in the district.
- To store the raw cashew for longer period to make it available in off season, there are requirements of common warehouse and cold storage facilities in taluka on priority based.
- Awareness programmes needed for improved production and processing practices for marketing of Cashew. Training in cashew processing is being provided on regular basis at Gopuri Ashran at Kankavli and M/S Hedgewar Seva Prkalpa (HSP).
- Scope for cashew apple processing, as is being tried out in Goa and utilization of cashew apple in Brazil (See Box: 6.2).
- Demand for a branch of the Cashew Export Promotion Council of India in either Ratnagiri or Sindhudurg.
- Port development to facilitate direct export from the district, instead of routing via Mumbai.

### Box 6.2: Draft Field Study, African Cashew Initiative<sup>20</sup>

#### **Cashew Apple Processing: Case of Brazil**

Rich in vitamins, polyphenols, sugars, minerals, amino acids and dietary fibre; cashew apple can be considered as a functional food. Despite being highly nutritious, utilization of cashew apple has been very limited due to high perishability and astringent taste. In Brazil, about 12 per cent of the cashew apples are processed, including juice extraction (8 per cent), fresh and dried fruit, jams, wines, candies and animal feed made out of waste products (*Draft Field Study, African Cashew Initiative*).

Brazil's Cashew harvest takes place between late September and early January. Each harvest step is important:

- **Picking not Plucking:** The cashew fruit should be picked from the ground or collected in nets hung under the trees, rather plucked from the trees. It is not easy to assess the ripeness of the fruit when it is still on the tree. Cashew fruits that have fallen to the ground and remain undamaged are sought after. Empresa Brasileira de Pesquisa Agropecuária (EMBRAPA), the Brazilian Agricultural Promotion Agency, has developed a cashew tree variety that produces apples that can remain on the ground for one day without being damaged or beginning to ferment.
- **Timing and Transport:** Cashew fruit juice processing plants source from cashew plantations within a radius of up to 40km. The apples need to arrive at a storage site within 24 hours. If the nut is separated from the apple, this time reduces to six hours maximum. Harvest workers keep the apples on plastic trays. Transport to a storage facility is done in 20kg buckets. It is important to avoid exposure to the sun.
- **Storage:** Cashew plantations are usually located within a radius of up to 40km. If the nut is removed from the fruit, this time is reduced to six hours. Arrived at the processing plant, the apples are stored on plastic trays and deep frozen at -17 degree C. They can be kept all year-long for processing.

Cashew apples are also sold into the fresh fruit market together with the nut (to preserve the apple). Street vendors carry bundles of cashew apples attached with a string. For the wholesale and retail market, cashew apples are kept

<sup>20</sup> African Cashew Initiative: Cashew Fruit Usage in Brazil

[[https://www.africancashewalliance.com/sites/default/files/documents/draft\\_apple\\_processing\\_study\\_brazil.pdf](https://www.africancashewalliance.com/sites/default/files/documents/draft_apple_processing_study_brazil.pdf) accessed on 17/11/2018]



on small trays of four or five (500-800g per tray) and packaged with polythene plastic in a passive modified atmosphere. This packaging and cooling at 5 degree C with relative humidity ranging between 85 and 90 per cent, increases the shelf life of the apple from four to 21 days. As a result, fresh apples can be sold on the urban markets of Sao Paulo and Rio de Janeiro, more than 3, 000km away from the harvesting area. According to EMBRAPA experiment (*Draft Field Study, African Cashew Initiative*), (i) Mixing fermented cashew apples with manioc powder for animal feed however in limited volumes, since juice extraction produces a significant amount of waste products used for animal feeds. (ii) It has also patented a process of extracting pigments for the use as natural colorant. Cashew apple fibres can also be used for making bread, snack bars and meat-like products. (iii) It has also developed a natural colorant made of the apple waste (after juice extraction). The process is patented and market prospects are positive.

## Environmentally Sustainable promotion of Mangoes and Cashew?

The Applied Environmental Research Foundation (AERF), a Pune based NGO working in Sindhudurg, observes that the impacts of climate change are clearly visible in the region as the cashew and Mango production is continuously on the decline since last five years. The monsoon pattern in the region is changing; and onset and retreat time are constantly shifting. Temperature fluctuations are common that affect the production of these two cash crops in the region. Changing weather patterns have resulted into onset of pests both on mango and cashew further contributing to decrease in production. The orchards and rampant use of chemical pesticides and fertilizers growth hormones within them is also adversely impacting the pollinators, which again cause decline in production. The pollinators also need diversity in the surroundings of orchards and crops; due to promotion of plantation diversity is on decline and further affects the wellbeing of pollinators.

According to AERF, there is a need to rethink and modify the subsidy-based model of Mango and Cashew cultivation, which is the main reason for deforestation. AERF has also demonstrated and scaled up sustainable value chains providing better income to local communities based on conservation of wild species. There are opportunities to improve and manage the existing orchards through subsidy and capacity building rather than promoting new plantations at the costs of forests and biodiversity. Promoting native cashew and mangos that are far more resilient and could also be options for creating a win-win. (pers comm, Nov 2018)

## VI.4 Recommendations for improving fisheries

- Deep-sea fishing should be encouraged by providing financial assistance to local fisherfolk on priority basis, along with training and equipment.
- Marine water fishes in cages should be promoted in sea by providing financial assistance. Department of fisheries should organize the training program for fisherman on cage culture for marine water fishes. Policy for providing Governmental areas on rental basis for sea cage culture should be finalized.
- Cleanliness and hygiene must be maintained and the fisherman working on ports, may be provided with basic facilities in the landing point including drinking water,



toilet facilities, electricity, street light, fish drying area, action hall and regular cleaning facilities etc.

- Government should construct cold storages having capacity of 1 to 2 tones on the basis of public private partnership.
- Steps should be taken to increase the processing unit in the district since there are sufficient supply of fresh fish in the area.
- To regulate illegal fishing, share information of the GPS data from light-house with district administration.
- Number of landing points should be increased in the district.
- ETPs may be provided to the processing units on PPP basis on a cluster basis.
- Skill training is required for fisheries sector for processing unit development.
- Port development is essential, which will help on only fish export but also development of cargo transport in the district.
- Since more women are involved in the fish market, so there should be some awareness and empowerment programme for the women engaged in this sector.
- Adequate attention is the role of state fisheries department in educating and creating awareness among fishing communities and societies about the impact of carrying out fishing activity during monsoon period. The district coastal zone management committee may prioritize the protection and restoration of coastal habitats and biodiversity on a priority basis.
- Quality ice, water and diesel to be provided to fisherman on reasonable price.
- Permanent arrangement should be made along the coast line of the district to remove accumulated silt from ports.
- Government should implement scheme to maintain and grow mangroves along sea and creek coast.
- Government should consider providing subsidy for construction of small units for separation of meat from fishes on the landing center so that self-help group will start production of value added items of fishes and this will lead to new employment generation in the region.

## VI.5 Enabling policy environment for attracting business in

### Maharashtra

Towards Ease of Doing Business, Maharashtra has been ranked at 13<sup>th</sup> place in 2017-18 at all India level. The state has taken following initiatives:

#### Key initiative implemented:

- Single Window commissioned to address queries.
- Published procedures and timelines for land allotments. Comprehensively digitized all land banks in the state.
- Mandated a single joint inspection by various departments.
- Harmonised provisions for self-certification under a number of labour acts.



- Provided detailed information on procedures and timelines for obtaining various infrastructure connections
- Implemented online system for tax related processes.
- Introduced e governance initiatives in law and judiciary department and created specialised courts relating to commercial disputes.

The future area of improvements for Maharashtra to promote industry are:

- Single window system
- Setting up a business and taxing in general
- Contract Labour inspection
- Payment of Wage & Gratuity
- Minimum Wage Inspection
- Environment general

Despite scoring above 90 percent on 7 out of 10 parameters, there exists potential for improvement on land and property registration, construction permits, and enforcing contracts.

According to CSIR report (2018) training of people in ethnic leather footwear manufacture, establishment of cottage and small scale units for production of ethnic footwear and facilitation of establishment of market linkage. In addition to this, establishment, maintenance, up gradation and dissemination of national Standards of measurements support can be provided which is expected to contribute to the improvement in the quality of the product and an overall growth & development of several other industries in the district leading to growth.

### ***Special Initiative of “Chanda te Banda” in Sindhudurg district***

Chanda to Banda is a unique micro-planning project. Chanda represents Chandrapur and Banda is a town at the Goa border in Sindhudurg, which is often used to refer to the width of the state in layman’s language. This is a unique approach towards development where economy, environment and human development will go hand-in-hand. The plan is to double the per capita income in Chandrapur and Sindhudurg districts, along with similar growth in human development indicators, as the project will touch upon every citizen, including students, farmers, fisherman, horticulturists, women and labourers.

The broad objective of the project was increase the annual per capita income of Sindhudurg and Chandrapur. The idea was to bring all government departments together to chalk out comprehensive plan involving micro-planning with identifying people’s need, studying available resources in the whole district, chalking out environment-friendly holistic development plans, including public-private partnerships and private investment.



## VI.6 District Plan Action Plan and Monitoring

Table (VI.1) presents the proposed short-term plan of actions in the identified domains, and the indicators to measure progress.

<b>Table (VI.1): Short term Action Plan and Indicators of Progress</b>				
<b>Areas</b>	<b>Action Points</b>	<b>Progress Yardsticks</b>	<b>Departments</b>	<b>Convergence with scheme</b>
<b>Tourism</b>	Beach and forest eco-tourism, regulation, better tourist facilities and signage's	Number of beach locations secured for responsible tourism; Nodal officers appointed at the District Administration for local beach and forest tourism regulation and oversight; Number of tourist locations with improved signage; water and sanitation arrangements; and hygienic eating houses; <i>Malvani-branded</i> eating houses and handicraft / processed food outlets in key locations	Tourism Department	Scheme of Rural Tourism
	Promotion of tourist-friendly cashless economy	Number of hotels and restaurant having cashless transaction facilities.	Bank of India	Initiative can be taken by lead Bank.
<b>Cashew</b>	Develop Cashew Clusters for production and processing	Change in level of production; Change in output of processed cashew; Change in income and welfare of labourers	Department of Agriculture	Cluster Development Program (CDP), Ministry of MSME
	Awareness campaign and training programmes	Number of persons trained; Campaign awareness achieved amongst farmers and producers	Department of Agriculture	Special training Programmes for farmers and producers under the schemes of "Minimum Skill Development Programme" and "Extension of Youth Welfare Programme in Rural areas"
	Build common warehouse and cold storage facilities	Number of facilities built; Availability of raw cashew during off-season	Department of Agriculture	Common Facility Centre under Cluster Development program
	Open a branch of Cashew Export Promotion Council of India	Benefit of government incentives to producers	Ministry of Commerce, Cashew Export Promotion Council of India	-
	Cashew apple processing on experimental basis	Results of experimental processing – benefits and costs assessed	Regional Fruit Research Station, Vengurla	National Horticulture Mission
<b>Mango</b>	Develop mango clusters for cultivation	Change in level of production by variety; Change in income of farmers and labourers	Department of Agriculture	Cluster Development Program, Ministry of MSME



## NCAER DIPP District Driven Growth Pilot Study Sindhudurg

	Awareness on GI tag	Benefits availed due to GI tag by farmers and marketing agencies	District Industry Centre	-
	Marketing campaign	Change in level of marketed produce; Change in incomes of farmers, labourers	Department of Agriculture	APMC
	Develop separate <i>Mandi</i> for Alphonso mango	Change in volume and price-realization of mangoes sold by variety	Department of Agriculture	APMC
	Improved pesticides to be developed	Reduction in crop-loss and fluctuations in production - levels due to pest attacks	Regional Fruit Research station, Vengurla	-
	Build common warehouse and cold storage facilities	Number of facilities built; Availability of mango/products during off-season	District Industry Centre	Common Facility Centre under CDP
	Ultra- High Density Plantation (UHDP) to be tried on experimental basis	Change in per acre productivity	Department of Agriculture	-
<b>Fisheries</b>	Make available basic facilities at landing points	Basic facilities available for fisher folks' welfare	National Fisheries Development Board; District Fisheries Department	Blue Revolution: Integrated Development and Management of Fisheries
	Develop Cold storage facilities	Number of new facilities developed	National Fisheries Development Board; District Fisheries Department	Blue Revolution: Integrated Development and Management of Fisheries





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## ANNEXES: TABLES

### A1: Persons/officials we met in Sindhudurg District and Mumbai

S. No.	Name of the Person	Designation	Address	Phone	Email id
1	<b>Dr. Dilip Pandharpate</b>	Collector & District Magistrate	Oras, Sindhudurg	9821075542 9422916986 Office: 0236228844	<a href="mailto:dilip.pandharpate@gmail.com">dilip.pandharpate@gmail.com</a> <a href="mailto:m/col.col.sindhudurg@nic.in">m/col.col.sindhudurg@nic.in</a>
2	<b>Shivaji Selke</b>	District Superintendent Agriculture officer	Oras, Sindhudurg	9423690854	<a href="mailto:saosindhu@gmail.com">saosindhu@gmail.com</a>
3	<b>Samant Arji</b>	Technical Assistant, agriculture department	Oras, Sindhudurg	8806054950	NA
4	<b>Srinivas V. Bitlingu</b>	Officer in Charge, Coir Board Sub Regional Office	Oras, Sindhudurg	8939060762/ 7030287336/ 02362- 228092	<a href="mailto:cbdcindhudurg@yahoo.in">cbdcindhudurg@yahoo.in</a>
5	<b>Mamta Hatkar</b>	District Planning Officer, Planning Department	Oras, Sindhudurg	8149318780	NA
6	<b>Pradeep Patel</b>	Acting in Charge	Sindhudurg district Agriculture Produce Market Committee	9423300173	<a href="mailto:am_sindhudurg@msamb.com">am_sindhudurg@msamb.com</a>
7	<b>K. Manjulakshmi</b>	Chief Executive Officer	Zilla Parishad Sindhudurg	02362228688 / 9673703072	<a href="mailto:ceozpsindhudurg@gmail.com">ceozpsindhudurg@gmail.com</a>
8	<b>Mr. Mane</b>	MTDC, Tourism	Oras, Sindhudurg	8422822069	NA
9	<b>Rjesh Kandalgan kar</b>	Branch Manager	Kudal Branch, Maharashtra Small Scale Industries Development Corporation LTD.	9403078768	NA
10	<b>Subhash Puranik</b>	Assistant Conservator of Forest, Forest Department	Samantwari	9422055146	<a href="mailto:puraniksubhash@gmail.com">puraniksubhash@gmail.com</a>
11	<b>Dr. B.N Sawant</b>	Associate Director of R&D (Agri)	Regional Fruit Research station, Vengurla	9422436117	<a href="mailto:balvantsawant@gmail.com">balvantsawant@gmail.com</a>
12	<b>Rajkumar Mahadik</b>	Assistant Commissioner	Fisheries Department, Malvan, Sindhudurg	9422374095	NA
13	<b>Mr. Chaudhary</b>	Joint Director	Directorate of Economics & Statistics, 8th Floor, Administrative Building, Government Colony, Bandra (East). Mumbai-400051	9869080033	NA
14	<b>Chandrash ekhar S. Jaiswal</b>	General Manager/Deputy General Manager	Maharashtra Tourism Development Corporation, Mumbai, Maharashtra, India	8879222067	NA
15	<b>Gunwant Bharwan Mahajan</b>	Senior Field Coordinator	Applied Environmental Research Foundation, Pune H	9420132565	NA
16	<b>Hemant Zantye</b>	Zantye, agro, Manufacturers of CNSL, Vengurla, Sindhudurg	Tulas, Vengurla, Sindhudurg	7058220000/ 942209654	<a href="mailto:achyutcashew@gmail.com">achyutcashew@gmail.com</a>



