

LIVING INCOME AND LIVING WAGE REPORT

RURAL MADHYA PRADESH, INDIA

DECEMBER 2021
(With an update to 2022)

NIDHI KAICKER • KURIAKOSE MAMKOOTTAM



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ABSTRACT

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AUTHORS: NIDHI KAICKER* • KURIAKOSE MAMKOOTTAM**

Abstract: The study on Living Wages and Income for rural Madhya Pradesh was conducted by the Anker Research Institute with support from Laudes Foundation, as part of a broader goal to help inform employers and policy makers as they adopt suitable policies and take appropriate steps to enhance the quality of life of the farmers and workers of rural Madhya Pradesh. Employing the Anker Methodology, the study used a combination of secondary data from reliable sources as well as primary data collected through field investigation. Intensive field investigation was carried out in the districts of Chhindwara in southern MP and Ratlam in western MP during October 2021 and December 2021. These districts have been chosen as representative of southern and western MP respectively. The estimated living incomes for rural MP are about 64% higher than the average monthly household consumption expenditure of rural MP. These estimates are close to average monthly household consumption expenditure of rural Punjab, but below that of rural Haryana and rural Kerala. These comparisons clearly indicate that families in rural MP cannot afford minimum standards of decent living.

Keywords: living income, living wage, Anker Methodology, Madhya Pradesh

JEL classification codes: J30, J50, J80.

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Any questions, comments, or observations about this study and the results it reports should be directed to the Anker Research Institute leadership:

marthaandrighard@ankerinstitute.org

* Nidhi Kaicker, e-mail: nidhikaicker@gmail.com

** Kuriakose Mamkootam, e-mail: kurias@gmail.com

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ABOUT THE AUTHORS

Nidhi Kaicker is an Assistant Professor of Management at Dr BR Ambedkar University, Delhi (AUD). She holds a bachelor's degree in Economics from St Stephens College and Post Graduate and Doctoral degrees in Management from Faculty of Management Studies, University of Delhi. Her teaching and research interests include managerial economics, food security and nutrition. She has been working on Living wage / income studies based on the 'Anker Methodology' since 2016.

Kuriakose Mamkoottam is a retired Professor of Management. He was introduced to 'Anker Methodology' in 2015 and since then he has been interested in living wage/ living income studies. With Post Graduate and Doctoral degrees in Sociology from the Delhi School of Economics, University of Delhi, his areas of interest include Labour, Human Resource Management and Technological Change.

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Disclaimer - The Anker Research Institute conducted this research with funding from Laudes Foundation. All views expressed in the report are those of the research team. The boundaries and other information shown on any map in this work are those of the research team and do not imply any judgement on the part of Laudes Foundation concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

EXECUTIVE SUMMARY

LIVING WAGES AND LIVING INCOME FOR RURAL MADHYA PRADESH

The study on Living Wages and Income for rural Madhya Pradesh was conducted by the Anker Research Institute with support from Laudes Foundation, as part of a broader goal to help inform employers and policy makers as they adopt suitable policies and take appropriate steps to enhance the quality of life of the farmers and workers of rural Madhya Pradesh.

Employing the Anker methodology, the study used a combination of secondary data from reliable sources as well as primary data collected through field investigation. Intensive field investigation was carried out in the districts of Chhindwara in southern MP and Ratlam in western MP during October 2021 and December 2021. These districts have been chosen as representative of southern and western MP respectively.

Living income refers to the total amount of income required by a family (of 4.5 persons in the case of rural Madhya Pradesh) to lead a decent life. Living wage, on the other hand, refers to the wage which a worker should be paid in normal working hours so that he/she can support himself and his family of dependents. Living wage is assessed on basis of the number of full-time equivalent working members in a reference family at a given place in a given point of time. Living wages and living income are estimated on the basis of assessing the cost of the basic constituents of decent living, namely, food (based on a nutritious and balanced diet), healthy and safe housing with sufficient space and amenities such as safe water, access to electricity, cooking fuel, toilet and sanitation etc. and non-food-non-housing (NFNH) items including cost of healthcare, children's education, transportation and other contingency and unexpected expenses.

On the basis of the study, Rs. 19,241 per month has been estimated as living income for a family of 4.5 in rural Chhindwara is, Rs. 20,450 for rural Ratlam. Similarly, Rs. 12,198 has been estimated as living wage per month for rural Chhindwara and Rs. 12,965 for rural Ratlam.

The living income (average of the two study districts) estimated in this report for rural Madhya Pradesh is approximately 2.7 times that of the 2014 national poverty line family income, and 2.2 times the World Bank international poverty line family income. It is 2.3 times that of family income assuming that family members earn prevailing wages for agricultural labourers and 2.1 times if family members earn prevailing wage of non-agricultural labourers; 1.7 times of family income assuming family members earn minimum wage for agricultural labourers and 35% higher if family members earn non-agricultural unskilled labourers' minimum wage. The estimated living incomes for rural MP are about 64% higher than the average monthly household consumption expenditure of rural MP.

PART I. INTRODUCTION

This report estimates living incomes and living wages for rural Madhya Pradesh, India. It is based on the Anker Methodology which is a mixed methods approach that uses secondary data available from reliable sources such as NSSO (2011-12), Census (2011), CMIE-CPHS (2020-21) as well as primary data gathered through field investigation in the districts of Chhindwara in southern Madhya Pradesh (MP) and Ratlam in the western part of Madhya Pradesh (MP), during October – December 2021. These study districts are typical districts for southern and western MP and so results in this report for Chhindwara district and Ratlam district are considered to be representative for southern MP and western MP respectively.

1. CONCEPTS OF LIVING INCOME AND LIVING WAGE

The concept of living income / living wage has been developed by Anker and Anker (2017), and Anker (2006) to ensure that workers and their families do not live in poverty, but are able to lead a decent life. Wages or incomes should be sufficient to support workers and their families to be able to afford a basic lifestyle considered decent by society at its current level of development. Workers should receive a living wage in normal working hours without having to work overtime.

The living wage has been defined by Anker and Anker (2017) as:

“[...] The remuneration received for a standard work week by a worker in a particular place sufficient to afford a decent standard of living of the worker and her or his family. Elements of a decent standard of living include food, water, housing, education, healthcare, transport, clothing and other essential needs including provision for unexpected events.”

(Global Living Wage Coalition, 2016, cited in Anker and Anker, 2017).

The Living Income Community of Practice defines living income as:

“[...] The net annual income required for a household in a particular place to afford a decent standard of living for all members of that household. Elements of a decent standard of living include: food, water, housing, education, healthcare, transportation, clothing, and other essential needs including provisions for unexpected events.”¹

(The Living Income Community of Practice, n.d.).

1 See: <https://www.living-income.com/the-concept>

2. LIVING INCOME/ LIVING WAGE FOR RURAL MADHYA PRADESH

Our estimate of living income for farmers / workers of rural Chhindwara district (MP) is Rs. 19,241 (\$255)² and Rs. 20,450 (\$271) for rural Ratlam district (MP) per month, for December 2021. The estimate for living wage is Rs. 12,198 (\$161) for rural Chhindwara and Rs. 12,965 (\$172) rural Ratlam³. These estimates are considered applicable more broadly to the rural southern MP and rural western MP.

We believe that, given the geographical proximity and somewhat similar socio-economic and agro-climatic conditions, the estimates made for rural Chhindwara also apply to rural Southern MP. Similarly, the estimates made for rural Ratlam could be applicable to rural Western MP. We say this because the above estimates are based on extensive coverage of forty villages (20 each from the districts of Chhindwara and Ratlam), which should broadly represent these areas.

This report explains in detail in the following pages below, how the living income and living wage has been estimated for rural Madhya Pradesh.

3. THE CONTEXT

The present study has been focused on the districts of Chhindwara in southern Madhya Pradesh and Ratlam in western Madhya Pradesh. Choice of these districts was influenced by more than one consideration. First and foremost, Laudes Foundation, the sponsor of the study, and the partner organizations (the Regenerative Production Landscape (RPL) Collaborative) have been interested in a scientific study to get the living income estimated for the farmers of southern and western Madhya Pradesh. The Foundation and the Collaborative have been engaged in local level projects to enhance the livelihood of farmers (including cotton growers) in these areas through holistic and sustainable farming.

Secondly, before finalizing the location of the study, authors of this report examined in detail secondary district level data available from sources such as the 2011 Census, to understand the socio-economic and demographic structure of Madhya Pradesh, population size, percentages of scheduled castes and scheduled tribes, rural-urban distribution, literacy rate, labour participation rates, poverty rate, agroclimatic zones, and cropping patterns. Based on a preliminary analysis of the data, Chhindwara located in south MP and Ratlam located in west MP appeared to represent the respective regions of the state.

Thirdly, choice of these two districts was made after consultation and discussion with several experts and senior members of various research and NGOs such as ASA, Self-Reliant Initiatives Through Joint Action India, Green Foundation, Anupama Education Society, and Samaj Pragati Sahyog, who have been working among the farmers of Madhya Pradesh. These researchers and experts confirmed the appropriateness of Chhindwara and Ratlam for southern and western MP respectively.

2 USD has been converted @75.57 INR.

3 The living income updated by inflation to mid-2022 (June) is Rs. 20,377 (\$261) for rural Chhindwara district (MP), and Rs. 21,657 (\$277) for rural Ratlam district at an exchange rate of 78.1 Rs./\$, which was the average exchange rate for June 2022. The living wage updated by inflation to mid-2022 (June) is Rs. 12,919 (\$165) for rural Chhindwara district and Rs. 13,730 (\$176) for rural Ratlam.

Madhya Pradesh, which literally means the central province of India, is, by area, among the largest states in India. In the year 2000, Chhattisgarh was formed as a new state by separating 17 districts of the southeast region of Madhya Pradesh. It borders the states of Uttar Pradesh in northeast, Chhattisgarh in southeast, Maharashtra in the south, Gujarat in the west, and Rajasthan in northwest. The state has a large percentage (more than 30%) of its area under forest cover.

Madhya Pradesh is among the least developed states of India. In terms of human development indices, Madhya Pradesh ranks 33rd from the top and 3rd from bottom among the 28 states and 8 union territories of India. The table below indicates the broad parameters of the state's demographics. As much as 72 percent of the population is rural, with a relatively high percentage (21.1%) of tribal population as against 8.2% for the whole of India.

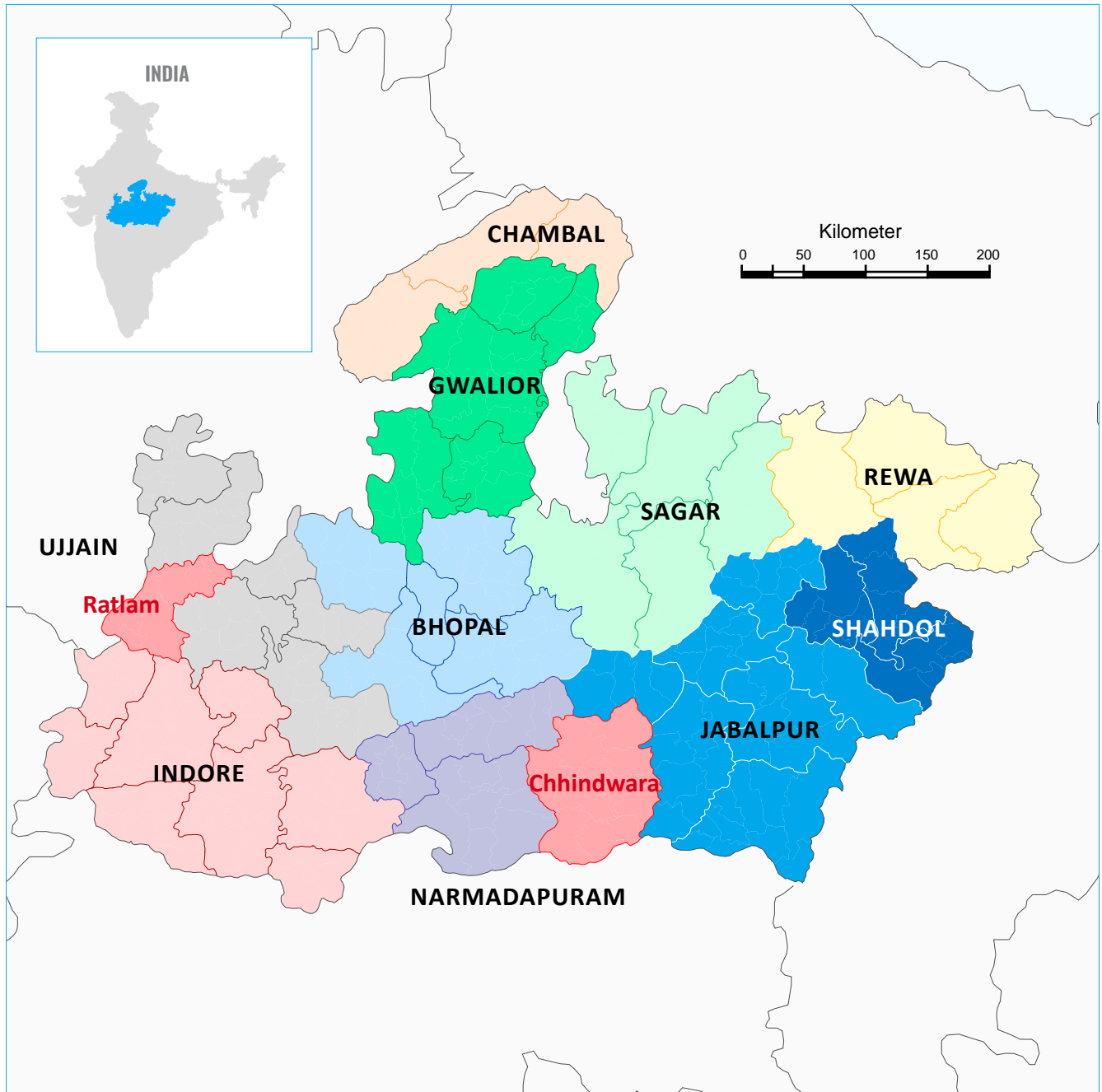
Table 1.1. Madhya Pradesh Demographics

Total Population (2011 census)	72.6 million
Percentage of Males	51.8%
Rural Population (%)	52.5 million (72%)
Scheduled Castes as % of Total Population	15.6%
Scheduled Tribes as % of Total Population	21.1%
Literate Population as % of Total Population	59.0%
Number of Workers (% of Population)	31.6 million (43.5%)
Number of Male Workers (% of Male Population)	20.1 million (53.6%)
Number of Female Workers (% of Female Population)	11.4 million (32.6%)

Source: Census (2011).

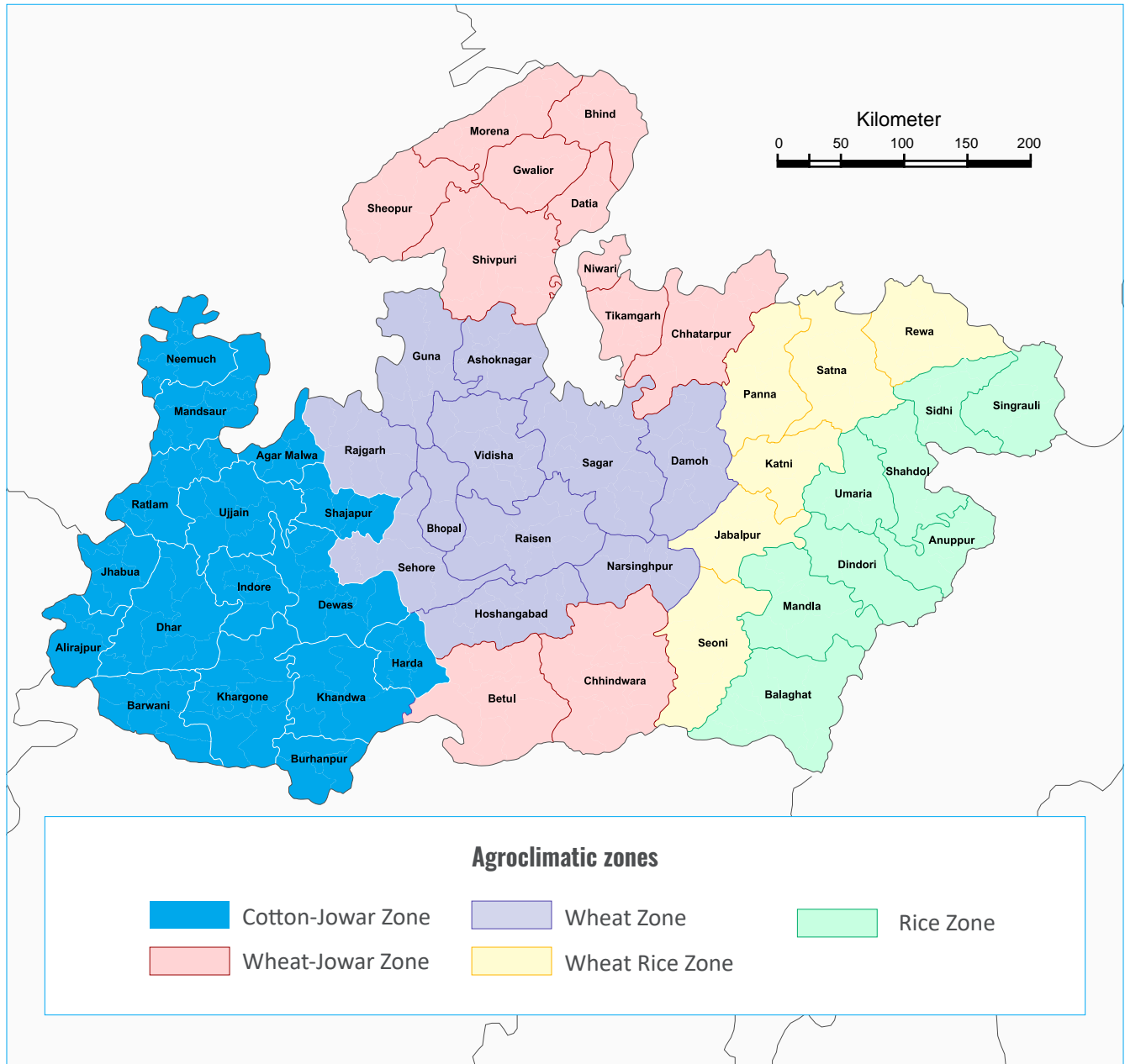
Madhya Pradesh is divided into 10 administrative divisions (see figure 1.1) and 52 districts, including two new districts. The two new districts have been added recently which were not officially included in the 2011 census.

Figure 1.1. Administrative divisions of Madhya Pradesh



Source: Constructed by authors based on administrative divisions of MP.

As shown in figure 1.2, in terms of agroclimatic conditions, the state could be divided into 5 zones. This classification is based on major crops grown in the state, namely wheat, rice, jowar, and cotton or their combinations.

Figure 1.2. Agroclimatic zones of Madhya Pradesh

Source: Based on MP State Agricultural Plan 2017 – 2021 (Government of Madhya Pradesh, 2017).

4. ECONOMY OF MADHYA PRADESH

Madhya Pradesh's economy is primarily agrarian; agriculture contributes about 46.98 percent to the state's Gross Value Added (GVA) in 2020-21. State's GSDP grew at a CAGR (in rupee terms) of 13.78% between 2015-16 and 2019-20. The state is rich in natural resources and is the only diamond producing state in the country. Over 280 pharmaceutical units operate in different industrial areas of the state (IBEF, 2021). Major crops that are cultivated in Madhya Pradesh include paddy, wheat, maize and jowar as cereals; gram, tur, urad and moong are

the major pulses; and oilseeds such as soybean, groundnut and mustard.⁴ Madhya Pradesh is also one of the ten cotton growing states in India, along with Punjab, Haryana, Gujarat, Maharashtra, Telangana, Rajasthan, Haryana, Karnataka and Orissa (USDA, 2022).

Tables 1.2 and 1.3 below show the demographics of the western and southern districts of Madhya Pradesh where the current study is located.

Table 1.2. Socio-economic-demographics of Western MP by district (for rural areas only)

District	No. of HH (000s)	Rural Pop (mn)	Literacy Rate	No of Workers (mn)	Main Workers (%)	Marginal Workers (%)	SC Pop (%)	ST Pop (%)	Poverty HCR*
Alirajpur	113.13	0.67	25.4%	0.35	71%	29%	3%	93%	42.8%
Barwani	204.64	1.18	35.0%	0.58	79%	21%	5%	78%	38.0%
Burhanpur	97.84	0.50	46.1%	0.24	81%	19%	8%	45%	28.1%
Dewas	221.28	1.11	54.3%	0.59	67%	33%	19%	22%	3.8%
Dhar	339.17	1.77	44.9%	0.88	74%	26%	6%	64%	5.6%
Harda	89.74	0.45	57.9%	0.19	68%	32%	16%	34%	34.5%
Indore	159.40	0.85	58.8%	0.39	83%	17%	19%	16%	11.2%
Jhabua	175.93	0.93	30.7%	0.48	71%	29%	1%	92%	23.1%
Khandwa	216.18	1.05	51.5%	0.53	79%	21%	12%	42%	41.2%
Khargone	309.32	1.57	49.1%	0.79	84%	16%	11%	45%	29.8%
Mandsaur	230.41	1.06	59.3%	0.58	77%	23%	21%	3%	21.5%
Neemuch	131.20	0.58	56.9%	0.32	84%	16%	14%	11%	20.1%
Rajgarh	292.02	1.27	48.9%	0.65	61%	39%	20%	4%	20.2%
Ratlam	211.85	1.02	49.7%	0.54	63%	37%	15%	38%	38.2%
Shajapur	244.24	1.22	56.6%	0.61	69%	31%	26%	3%	5.0%
Ujjain	238.95	1.21	55.6%	0.62	70%	30%	31%	3%	7.8%

Source: Census 2011; *Poverty HCR (head count ratio) is based on NSSO 68th Round: July 2011 to June 2012 (NSSO, 2014).

4 Madhya Pradesh is one of the ten cotton growing states in India, along with Punjab, Haryana, Gujarat, Maharashtra, Telangana, Rajasthan, Haryana, Karnataka and Orissa (USDA, 2022). Interestingly, India is the largest cotton producing country in the world, accounting for about one third of the total area under cotton cultivation globally. It produces about 6.1 million metric tons of cotton (Statista, 2021). Cotton grows in tropical and subtropical regions, requiring relatively high temperature ranging between 21°C and 35°C. Sandy loamy soil and deep black soil with adequate amounts of bacteria is suitable for growing cotton. Cotton is a predominantly Kharif crop, dependent on monsoon rains and is planted from the end of April through September. It is harvested in the fall and winter. About 5.7 percent of total area in India is reportedly under cotton cultivation. Cotton yields have reportedly plateaued in recent years with an average of approximately 500 kilograms per hectare.

Table 1.3. Socio-economic-demographics of Southern MP by district (for rural areas only)

District	No. of HH (000s)	Rural Pop (mn)	Literacy Rate	No of Workers (mn)	Main Workers (%)	Marginal Workers (%)	SC Pop (%)	ST Pop (%)	Poverty HCR*
Betul	261.88	1.27	55%	0.68	62%	38%	9%	50%	77.2%
Chhindwara	333.15	1.59	57%	0.78	67%	33%	10%	45%	62.6%
Hoshangabad	175.53	0.85	60%	0.35	71%	29%	16%	21%	36.6%

Source: Census 2011; *Poverty HCR (head count ratio) is based on NSSO 68th Round: July 2011 to June 2012 (NSSO, 2014).

Tables 1.4 and 1.5 below show the cultivable area and the landholding patterns of the districts of southern Madhya Pradesh and that of Western Madhya Pradesh. The last column indicates the major crops cultivated in the districts (in volume) as per the latest official records.

Table 1.4. Land use in Western MP by district

District	Total Area (Mn Hectares)	Cultivable Area (Mn Hectares)	Total No of Landholdings (000s)	Share of Small Holdings (<2 Ha)	Share of Medium Holdings (2-10 Ha)	Share of Large Holdings (>10 Ha)	Major Crops
Alirajpur	38.27	0.70	NA	NA	NA	NA	NA
Barwani	52.90	0.63	90.46	52%	45%	2%	Cotton, Jowar, Maize
Burhanpur	34.27	0.16		NA	NA	NA	Cotton, Soybean, Jowar
Dewas	70.13	0.28	145.62	54%	41%	4%	Soybean, Wheat, Gram
Dhar	81.95	1.46	187.17	56%	41%	3%	Soybean, Wheat, Cotton
Harda	33.06	0.53	35.37	30%	57%	14%	Soybean, Wheat, Gram
Indore	38.31	0.20	107.72	62%	35%	3%	Soybean, Wheat, Gram
Jhabua	29.31	1.84	186.09	65%	35%	1%	Maize, Urad, Wheat
Khandwa	77.56	0.01	168.48	53%	44%	3%	Soybean, Cotton, Wheat
Khargone	81.87	1.60	161.27	55%	42%	3%	Cotton, Jowar, Wheat
Mandsaur	55.18	1.62	161.51	64%	34%	2%	

District	Total Area (Mn Hectares)	Cultivable Area (Mn Hectares)	Total No of Landholdings (000s)	Share of Small Holdings (<2 Ha)	Share of Medium Holdings (2-10 Ha)	Share of Large Holdings (>10 Ha)	Major Crops
Neemuch	39.36	1.72	94.72	69%	30%	1%	Soybean, Wheat, Rape
Rajgarh	61.63	2.71	469.49	26%	73%	1%	Soybean, Wheat, Rape
Ratlam	48.60	1.64	346.90	28%	71%	1%	Soybean, Wheat, Maize
Shajapur	61.66	1.26	187.60	60%	37%	3%	Soybean, Gram, Wheat
Ujjain	60.99	0.81	160.38	52%	43%	5%	Soybean, Wheat, Gram

Source: MP State Agricultural Plan 2017 – 2021 (Government of Madhya Pradesh, 2017)

Table 1.5. Land use in Southern MP by district

District	Total Area (Mn Hectares)	Cultivable Area (Mn Hectares)	Total No of Landholdings	Share of Small Holdings (<2 Ha)	Share of Medium Holdings (2-10 Ha)	Share of Large Holdings (>10 Ha)	Major Crops
Betul	100.78	3.94	178,027	56%	40%	4%	Wheat, Jowar
Chhindwara	118.49	4.02	252,871	62%	36%	2%	Wheat, Jowar
Hoshangabad	66.87	3.81	112,424	57%	40%	3%	Wheat, Other Cereals

Source: MP State Agricultural Plan 2017 – 2021 (Government of Madhya Pradesh, 2017).

The Chhindwara district is located in the southern part of the state, approximately 125 km from Nagpur (Maharashtra) and 218 km from Jabalpur (Madhya Pradesh). Ratlam, as mentioned earlier, is located in western part of Madhya Pradesh.

Chhindwara district has a population of 2,090,922 out of which 1,064,468 (50.90%) are male and 1,026,454 (49.09%) are female, with a sex ratio of 966 females for every 1,000 males. It has a literacy rate of 72.21%, with 90.70% among urban males, 75.17% among rural males, and in contrast 80.57% among urban females and 57.26% literacy among rural women. Approximately 75.84% of Chhindwara's population lives in urban areas and 24.16% lives in rural areas. The district also has a relatively high percentage of tribal population with nearly 37% belonging to Scheduled Tribe (ST) and a little over 11% belonging to Scheduled Caste (SC) (Census, 2011).

Ratlam district has a total area of 4,861 kms, out of which 4,749.21 km (97.7%) is rural and 111.79 km is urban. Again, 1,020,038 persons (70.1%) out of the total population of 1,455,069, live in rural areas and the remaining 435,031 (29.89%) live in urban areas of the district. A little less than half (49.36%) of the rural population are

female while the share of female population in urban areas is a very similar 49.02%. Compared to Chhindwara, the tribal population of Ratlam is 28%, and a little over 14% belonging to Scheduled Caste (SC) (Census, 2011).

Chhindwara district has 1,948 villages and is divided into 12 tehsils (or community development blocks (CD) for administrative purposes. Ratlam district, consisting of a total of 1,053 villages, and is divided into 8 Tehsils / Blocks / (Community Development Blocks) for administrative purposes (Census, 2011). The CD Block is a rural area earmarked for administration and development purposes which is administered by a BDO (Block Development Officer). Under a given CD block there are several gram panchayats which are the local administrative units at the village level.

The people of the Chhindwara district depend on multiple livelihoods, with agricultural farming as the major occupation. It is famous for its forest and mineral wealth. Although the primary crop grown in Chhindwara is corn, other crops such as wheat, paddy, soyabean, pulses, and fruits including oranges and cash crops such as cotton are also cultivated here. Soyabean is a main crop of Ratlam district.

5. THE ANKER METHODOLOGY

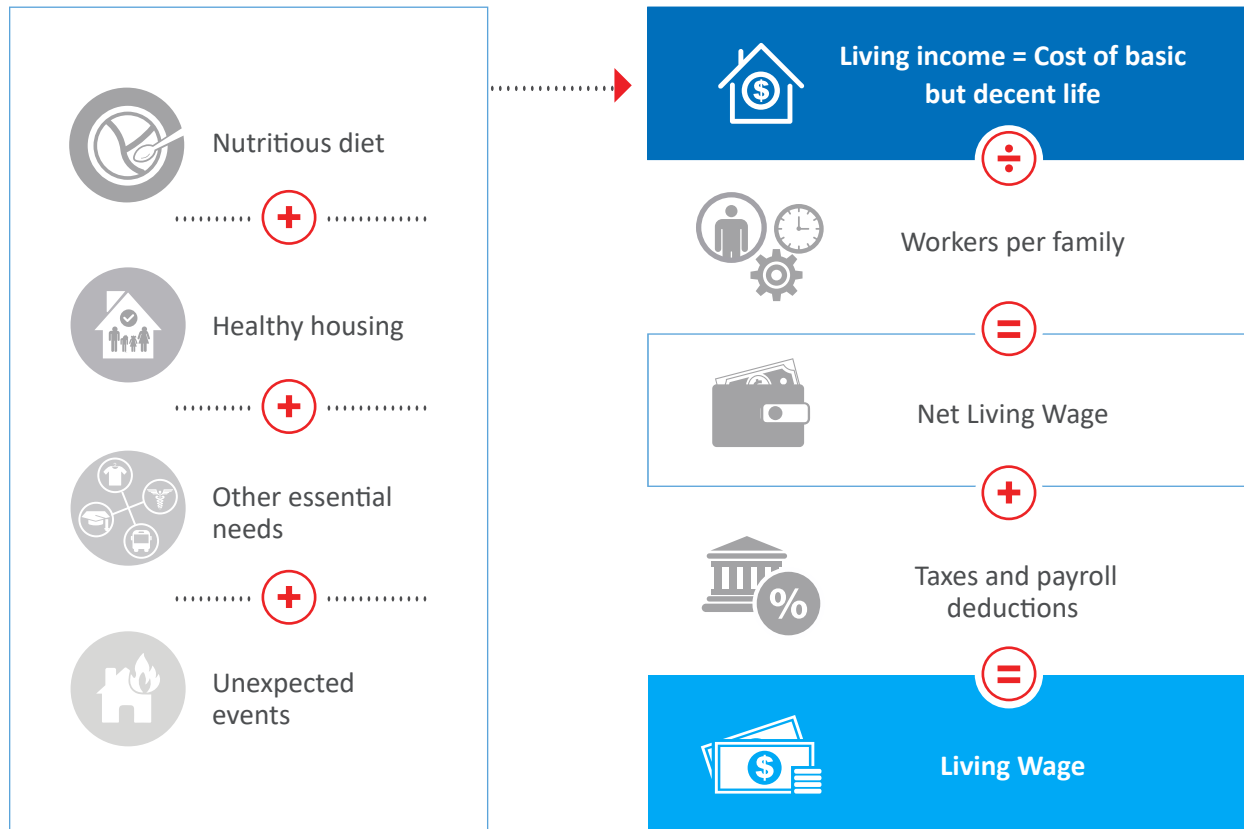
This report is based on the living income and wage benchmarking methodology developed by Richard Anker and Martha Anker (Anker and Anker, 2017). The Anker Methodology recommends a detailed process to ascertain the living income and living wage for a family in local conditions. This process takes into account the cost of nutritious food, healthy housing, adequate healthcare, children's education through secondary school, transport and other costs including those for unforeseen events.

The principles and innovative aspects of this methodology include:

- Assumptions used to estimate a living income and living wage are clearly stated, so that all the stakeholders understand how living wage benchmarks are estimated, and what farmers and workers and their families would be able to afford if they earned a living wage and living income.
- The living incomes and living wages estimated are based on normative standards such as a nutritious and palatable diet, safe housing, adequate health care, education for children, costs of transportation, and unexpected events.
- It is based on a realistic estimation of costs calculated specifically for a given time and place. Therefore, living income and living wage increase with economic development and rising living standards.
- Separate living income and living wage benchmark estimates are necessary for rural and urban areas.
- Wages paid and income earned should include all forms of remuneration including fair and reasonable value of benefits paid in-kind and cash allowances, but should exclude overtime.
- The living income and living wage methodology is internationally comparable as the estimates are based on the same principles everywhere.
- The methodology is practical and relatively inexpensive, as it uses a judicious mix of critical analyses of secondary data and rapid assessment methods for collection of primary data.

Figure 1.4 below explains how the living income and living wage were estimated in this report for rural Madhya Pradesh. It shows the components of a basic but decent life for a typical size family, moving from cost of a basic but decent life to net living income and living wage and moving from net living wage to gross living wage.

Figure 1.4. Estimation of Living Income and Living Wage



Source: Anker and Anker (2017)

6. FAMILY SIZE TO BE SUPPORTED

The cost of a basic but decent living for a typical family, including in the chosen areas of our study in rural MP, depends in part on the family size. The cost of living naturally increases with the size of the family. A typical or reference family size of 4.5 is used in this report.

7. DETERMINING REFERENCE FAMILY SIZE

The appropriate family size for a living wage is arrived at by considering both the average household size (excluding single person households and very large households) and the typical number of children per woman born and surviving) as measured by the total fertility rate adjusted for under 5 mortality rate.

The average household size in rural Madhya Pradesh in 2011 was 4.75 when single person households (that do not have children) and especially large households of 9 or more members (that are probably extended families with more than two potential adult workers) are excluded. For the specific locations of the current study, the average household size for rural Chhindwara district was 4.66 when single person and very large households are excluded. The average household size for rural Ratlam was 4.64 when single person and very large households are excluded. (Census, 2011).

Another way to arrive at an appropriate reference family size is to determine the typical number of surviving children per woman in the study area and add 2 adults (the parents) to this. This calculation is based on the total fertility rate (i.e. number of children born per woman) and the child mortality rate. The total fertility rate in rural MP ranges from 3.0 (SRS Bulletin, 2017) to 3.1 (SRS Bulletin, 2016). When adjusted for the child mortality rate of 60 per 1,000 births in rural MP (SRS Bulletin, 2018), this amounts to an average of 2.87 surviving children. The reference family size based on these calculations is 4.87 (2 adults + 2.87 surviving children).⁵

Based on the above, a reference family size of **4.5** is used for this study. Since the data used above for calculating average household size and child mortality adjusted total fertility rate are somewhat dated (e.g., the latest census data available goes back to 2011), and there is a general downward trend in these parameters, the child mortality adjusted total fertility rate of 2.87 for rural Madhya Pradesh. The average adjusted household size of 4.75 for rural Madhya Pradesh (and 4.66 for rural Chhindwara and 4.64 for rural Ratlam) were rounded down to a reference value for this study of 4.5.⁶

5 Although child mortality rate was somewhat higher in Ratlam compared to Chhindwara (AHS Factsheet, 2012).

6 The choice of the reference family size of 4.5 was further corroborated by our field investigation. In Chhindwara, the research team visited a total of 68 farm households, out of which 27 households comprised 4 members (typically a couple and two children), 10 households comprised 5 members, and 20 households comprised 6 or more members (mostly when three generations were found to be living in the same house). Focused group discussions with women in several blocks also revealed the growing preference for small families, and most of them have two children. In Ratlam, out of the 100 households visited, 53 comprised more than 5 members, mostly when multiple generations were found to be living in the same house in a joint family setup, and 39 houses comprised 4 or 5 members. The number of children in 41 out of the 100 households was 2; in 23 houses, the number of children was 1, and only 12 houses had 3 children.

PART II. COST OF DECENT LIVING IN RURAL MADHYA PRADESH

Cost of decent living consists of expenses incurred for a nutritious diet, healthy housing, and non-food and non-housing (NFNH) expenses. NFNH expenses include several components such as the cost of adequate healthcare, children's education through secondary school, transportation, clothing, and other necessary expenses. This section discusses the process and method of determining these costs. This has been done for a typical reference family of 4.5 persons consisting of two adults and 2.5 children (see section 1.7 for reference family size).

8. COST OF FOOD AND FOOD PRICES

The cost of food is the most important component that makes up the cost of living. The cost of food has been calculated on the basis of a low-cost but nutritious diet and the prices of food items (for preparing such a diet) prevailing in the study districts for a family of 4.5 persons.

8.1. Average Energy Requirements

Ability to undertake routine activities is a pre-requisite for leading a normal life or decent living; all activities consume human energy. The energy required for basic bodily functions (indicated by Basal Metabolic Rates) has been calculated by the Schofield equations recommended by WHO, which is based on a person's age, gender and body size. The body size (weight) input is typically based on an assumption of BMI of 21 (the midpoint of the normal healthy weight range for BMI). The average attained height of an average Indian adult male is 1.780 meters and 1.627 meters for an average Indian adult female in MP (ICMR - NIN, 2020).⁷ The basic energy requirements thus determined were further adjusted for different levels of physical activity. Children were assumed to have moderate activity levels. Adults in the current study, because of the nature of their work and life style (involving non-mechanized farm work for both males and females as well as vigorous housework for females) are assumed to have vigorous activity levels. After making small adjustments for the extra calories needed for pregnancy and lactation, our calculations suggest a requirement of **2,489** calories per person per day in the reference family.

To validate the above calculation, we also examined the average calorie requirements using norms developed by the National Institute of Nutrition (NIN) on recommended dietary allowance (RDA) (ICMR – NIN, 2020). The average requirement (EAR) of calories for Indians estimated in the 2020 NIN report were also investigated. Using the NIN recommended norm of 3470 Kcal/day for adult males with vigorous activity levels, 2720 Kcal/day for adult females with vigorous activity levels, and 1902 Kcal/day for children, the average calorie requirements per person for a family size of 4.5 is **2,432** (excluding small increases for pregnancy and lactation). Thus, our estimate of calorie requirement for rural MP using Schofield equations is similar to that recommended for all-India by the National Institute of Nutrition (NIN).

⁷ The estimates of average adult male and female height in India are 1.77 meters and 1.62 meters respectively, given by the National Institute of Nutrition. Due to the unavailability of recent state level data on adult heights, we have increased the Indian averages by 0.5% based on the findings of a study on state-wise differences in adult heights by Mamidi et.al, 2011. The study assesses the average adult height in different states of India based on the data from National Family Health Survey. It found that the adult height is slightly higher (by 0.5%) in MP compared to all-India. Average adult male height in MP is 1.656 meters compared to 1.647 meters for all India. Similarly, the average adult female height in MP is 1.526 compared to 1.519 for all India.

8.2. Preparation of Preliminary Model Diets

Determining the cost of a low-cost but nutritious diet for the reference family is a critical step for estimating a living wage and living income. It is important that the diet suits the food habits and preferences of the local people. The diet needs to be not only nutritious, meeting the WHO recommendations of minimum nutrient intakes, but should also be consistent with local food preferences, relatively low cost for a nutritious diet, and consistent with the country's development level. Therefore, the recommended model diet for this study must meet the average calorie requirements that have been calculated above and include appropriate macro and micronutrients.

As a starting point to prepare our model diet, actual food consumption data for rural Madhya Pradesh available from the latest National Sample Survey (NSS) – Round 68: July 2011-June 2012 (NSSO, 2014) - on household consumption and expenditure have been used.⁸ This provides a good starting point for developing the model diet, because it indicates the general consumption pattern of food across major food groups.

The National Sample Survey Office (NSSO), Ministry of Statistics and Programme Implementation, undertakes all-India survey on household consumption expenditure (CES) at quinquennial intervals. The latest available survey (the 68th round) on consumer expenditure was conducted during July 2011-June 2012.⁹ The NSS Consumer Expenditure Survey generates estimates of household Monthly Per Capita Consumer Expenditure (MPCE) and the distribution of households and persons over the MPCE classes. It is designed to collect information regarding expenditure on consumption of goods and services (food and non-food) consumed by households.

These NSS data include information on consumption (in kilograms) of various food items per person for 30 days for rural MP. We converted these data into number of purchased grams per day.¹⁰ We also aggregated listed food items under eleven different food groups that are typically used in model diets to determine the number of grams purchased for each food group. Details of how edible grams for each food group were calculated from purchased grams and the specific food items that we used to represent each food group are provided in Table 2.1.1. This includes both purchased grams according to NSS data as well as the adjustments we made to construct our nutritious model diet for rural MP which is expressed in edible grams. It should be mentioned here that NSS 2011-12 data for rural MP used to create a preliminary model diet was further modified by making adjustments based on local food preferences and local food prices and discussions with workers, farmers and key informants during our field research.

8.3. Nutritional Content of Food Items

Instead of using the USDA Nutrition Database (which is often used in Anker living wage and income studies), the Database of the National Institute of Nutrition (NIN, 2012) was used. The latter provides nutritional content of each food item (based on edible portions) such as calories, proteins, fats and carbohydrates). The NIN database is preferred, because of its specific reference to the Indian context.

⁸ It is worth noting that model diets based in part on actual food consumption observed in household expenditure surveys have also been used widely by government ministries and the World Bank to estimate food costs for poverty lines.

⁹ Data from a more recent NSO CES survey for 2017-18 was withheld (Seshadri, 2019).

¹⁰ In case of a few food items, consumption is not given in weight, but in number of units consumed (e.g.: Eggs, Lemon, Bananas, etc.). In such cases, average weights of these food items were used to convert them to number of grams.

Table 2.1.1. Number of purchased grams and specific foods for rural MP

Food group #	Food group	Details for NSS data for rural MP	Adjustments to create to create final model diet for rural MP
1A	Cereals and Grains	According to NSS data, a total of 385 grams of cereals was purchased per person in rural MP. This has been proportioned between wheat and rice, the two common cereals in the study region using the same ratio as indicated by the NSS consumption of these two items [79% and 21% respectively].	We added maize and reduced wheat and rice accordingly. During our field investigation, we observed that maize is popular, primarily because it is grown at home by many rural families and so inexpensive. Many farm households indicated consumption of maize; but wheat was stated to be the preferred cereal. Therefore, we included maize as 4% of cereals in our model diet and reduced wheat and rice accordingly.
1B	Prepared Cereals (e.g., bread and pasta)	NSS data does not report consumption of prepared cereals.	Prepared cereals were not found to be popular in our fieldwork, and hence we excluded this food group.
2	Roots and Tubers	Actual consumption of roots and tubers, according to NSS data, was 47 grams per person per day. Roots and tubers are an important source of starch and calories in India.	Potato was used to represent the roots and tubers food group, because it is widely consumed and relatively inexpensive in rural MP.
3	Pulses	Pulses are a popular and inexpensive source of protein worldwide. According to NSS data, 29 grams of pulses was consumed per person per day.	<i>Arhar</i> dal represents pulses in our model diet, because it is the most consumed pulse/legume in the study regions. We found in our field investigation in Chhindwara that 60 out of 68 households surveyed consumed <i>Arhar</i> dal as part of their daily food. Similarly, in Ratlam, all 100 households we spoke to consumed <i>Arhar</i> dal as part of their daily food. Other pulses (Chana, Moong, Urd) are not consumed often; nor are they much different in cost per kg. The average price per kg of <i>Arhar</i> dal, Moong dal and Urd dal were found to be Rs. 108, Rs. 111 and Rs. 109 respectively.

Food group #	Food group	Details for NSS data for rural MP	Adjustments to create to create final model diet for rural MP
4	Dairy	<p>Actual consumption of Buffalo milk, as per NSS data, was 135 grams per person per day. Purchase of other dairy products is limited in rural MP as many of these, especially Curd and Paneer (cheese), are prepared at home from raw milk.</p>	<p>The field investigation in the two study districts, especially Chhindwara, revealed little consumption of milk, primarily due to unaffordability. Only households, which owned milch cattle, consumed milk regularly (mostly in Ratlam).</p> <p>We increased milk consumption to ensure a nutritious diet to 1 cup per day for children and ½ cup for adults per day in Chhindwara and ¾ cup for adults per day in Ratlam (which is also consumed in the form of curd and paneer). A higher dairy consumption is taken for Ratlam to provide additional proteins for the primarily vegetarian population because of lower consumption of eggs and meat.</p>
5	Eggs	<p>According to NSS data, consumption of eggs was a negligible 1 gram per person per day. Data on eggs was given in numbers/units in NSS data which we converted to grams (assuming an average weight of 50 purchased grams and 44 edible grams per egg).</p>	<p>Consumption of eggs in the two study districts was found to be limited because of affordability. The few who owned hens would consume eggs more frequently, compared to those who had to buy them from the market.</p> <p>We included two eggs per week to provide proteins and a palatable diet for Chhindwara, and 1 egg per week for Ratlam since a good percentage of population is vegetarian. Only 29% of the households we contacted in Ratlam consumed eggs.</p>

Food group #	Food group	Details for NSS data for rural MP	Adjustments to create to create final model diet for rural MP
6	Meat & Fish	Actual consumption, according to NSS data, was 6 grams of all meats and fish together per person per day.	<p>In-depth interviews with respondents in Chhindwara revealed that chicken was the preferred meat and mutton was hardly consumed. In Ratlam, about one-third of respondents consumed meats (and infrequently, due to lack of affordability). The preferred meat was chicken. We allocated meats to poultry only. It was by far the most preferred meat – and also the least expensive.</p> <p>We included 1 serving per week to provide proteins and a palatable diet for Chhindwara, and ½ serving per week for Ratlam as large percentage of population was vegetarian. In Ratlam, 43% of the households, we contacted, indicated consumption of meat.</p>
7A & 7B	Vegetables	NSS data report an actual consumption of 132 grams of vegetables per person per day. Common vegetables include: (i) spinach (the most common green vegetable), (ii) pumpkin, (iii) brinjal, (iv) and (v) tomatoes and onions (which are consumed independently but also are important ingredients in Indian cooking).	<p>Vegetables included in our model diet was based on in-depth interviews with respondents in Chhindwara and Ratlam as well as observed prices. This revealed that cauliflower was a popular and inexpensive vegetable (and according to NSS, cauliflower is third most commonly purchased vegetable). Other commonly consumed and inexpensive vegetables in the study areas were spinach and brinjals as well as, of course, tomatoes and onions.</p> <p>Each of these 5 vegetables have been allocated equal amounts of edible grams in our model diet.</p>

Food group #	Food group	Details for NSS data for rural MP	Adjustments to create to create final model diet for rural MP
8	Fruits	According to NSS data, 24 grams of fruits was consumed per person per day. Bananas were the most popular fruit in the region. Since consumption of bananas and several other fruits was expressed in number of units in NSS data, these were converted to purchased grams using appropriate weights per unit (e.g., an average weight of 120 gram per unit is used for bananas ¹¹)	<p>Since bananas are available throughout the year and it is also the cheapest fruit, we included it in our model diet.</p> <p>It is worth noting that respondents in Chhindwara stated that oranges, custard apple and mangoes were commonly consumed in different seasons. In Ratlam, papayas and guavas were commonly eaten fruits. So, we included a second common fruit in our model diet – oranges in Chhindwara and guavas in Ratlam.</p>
9	Oils & Fats	Actual consumption of oil is 22 grams per person per day, according to NSS data.	Type of cooking oil used differs in various parts of India. Soyabean oil was found to be the least expensive and most widely used cooking oil in the study districts. It is typically purchased in 1-liter bottles.
10	Sugar	According to NSS data, 27 grams of sugar was consumed per person per day. Other sugar products like gur (jaggery) and candy were negligible and so were ignored.	Based on WHO recommendation on maximum amount of sugar, 30 grams per person per day has been included in our model diet.
11	Non-alcoholic Beverages	NSS data reports consumption of a negligible amount of 0.16 grams of tea per person per day. This amount is clearly too low.	Tea is popular in this part of the country, and so has been included in our model diet and expressed in grams of tea leaves per person per day (using 2 grams per cup of tea and assuming 2 cups per day for adults). This amounts to 1.78 grams per person in the family per day.

11. The average weight was calculated by the research team by weighing quantities (in dozens) of various fruits and estimating the per unit weight in grams. We weighted a dozen bananas repeatedly and the total weight ranged from 1.3 kilograms to 1.5 kilograms.

8.4. Conversion of purchased grams to edible grams

We used the USDA Nutrient Database¹² to calculate the edible proportion of each food item, with some adjustments made to suit local conditions.

8.5. Additional Model Diet Costs

We added three additional costs to our model diet to make it more realistic. In order to ensure reasonable variety to the diet, 12% was added to the cost of the model diet; 8% was added to account for costs of salt, spices, condiments and sauces (as indicated in NSS data for these food items); and another 5% was added to account for wastage and spoilage in the preparation and storage of food.

8.6. Nutrition Adjustments to Create our Model Diet

After obtaining the edible grams for each food group and food item in the initial diet based on NSS food consumption data from 2011-12, these amounts were first adjusted to ensure 2489 calories.¹³ The following adjustments were then made to ensure that our model diet meets the WHO and ICMR nutritional standards of calories, macronutrients, and micronutrients. Features of our model diet are as listed below:

- The diet is palatable for rural MP, i.e. reflects local food preferences. The choice of various food items in each food group represents commonly purchased and relatively inexpensive items, including non-vegetarian food that is commonly consumed in rural MP.
- The diet is of relatively low cost for a nutritious diet. For food items (cereals, vegetables, fruits, and pulses) where a number of varieties are available, items of lower cost have been chosen when they are widely available and considered locally palatable.
- Based on observed differences around the world, Anker and Anker (2017) recommends that 11-12% of calories should come from proteins for a lower-middle income country such as India. In our model diets, around 12% of calories come from proteins. Also it is important that minimum amounts of animal-based foods as well as protein-rich plant-based products are included, despite their high cost per calorie. Hence, the following adjustments have been made:
 - o For Chhindwara district, one serving (85 edible grams per serving) of meat per week, which implies ~12 grams per day has been included. This has been allocated to chicken, which is the least expensive and widely consumed item of the category in the study areas. For Ratlam, since a larger part of population is vegetarian, one serving of meat in every two weeks has been included.

12 There is no reliable source available in India providing edible proportions of the various food items. Hence, we rely on the USDA database. However, some adjustments were made, as the methods of preparation for several vegetables differ between the United States and India. For instance, skin of potato is eaten locally and hence the edible portion is higher in India (90%) compared to the United States (75%). Similarly, the edible proportions of some vegetables are also higher in India compared to the United States. For example, 80% of spinach in India vs 72% in the US (this may be because spinach is bought without large roots in India, only large stems are removed); 75% of Cauliflower in India vs 39% in the USDA database (this could be because stalks and stems are also used in the vegetable preparation in India); 100% of Tomato used in India vs 91% in USDA NAL (this may be because tomato is purchased without stem, and the core is also consumed in India); 95% of Guava in India vs 78% according to USDA because the skin is consumed and only a small core is not eaten); Chicken in rural India is mostly bought live. Feather, legs and head of the chicken are removed while dressing it before cooking, while giblets including neck, liver, heart and gizzard are cooked and eaten in rural India, leaving the wastage to 25% only.

13 The starting model diet based solely on NSS food consumption data indicated too few calories (1971 calories). Hence, the number of edible grams for each food in the NSS diet was proportionately scaled up so that the total number of calories in the model diet equalled the total number of calories required (as calculated and indicated above).

- o 2 eggs per week (44 edible grams per egg) which implies ~12 edible grams per day in Chhindwara. For Ratlam, one egg per week is included.
- o As per the recommended norms, at least one cup (240 ml) of milk for children and ½ cup for adults is considered necessary. This amounts to about 187 grams of milk per capita per day (this amount is taken for Chhindwara). In Ratlam, as large part of the population is vegetarian, and as fewer servings of eggs and meat have been included, the adult milk consumption is taken as ¾ cup per day, amounting to 213 grams per capita. Although higher than actual consumption at present, because of low consumption of meat, fish and egg, consumption of adequate amount of milk is included as an important source of protein. Further, it is a common practice that families use milk to prepare curd and paneer at home.
- Based on WHO/FAO (2003) and Anker & Anker (2017) guidelines, 325 grams (for lower-middle income countries) of fruits, vegetables (excluding roots and tubers), pulses and legumes are included in our model diet. NSS data on food consumption indicate that vegetable and fruit consumption is only about 77 and 19 edible grams per capita per day respectively. Accordingly, the amounts of vegetables and fruits in our model diet has been increased substantially to meet the requirements of 325 grams.
- 30 grams of sugar, which is the maximum amount WHO recommends per day, has been included in the model diet; this is a little higher than 27 grams of current consumption which is reported in NSS data.
- The WHO standard restricts oil consumption and Anker and Anker (2017) sets this at a maximum 34 grams per person per day. Oil consumption is 27 grams as per our model diet.
- In rural India, prepared cereals such as pasta and bread are uncommon and hence prepared cereals are not included in our model diet.
- In order to ensure reasonable variety in the diet, 12% was added to the cost of the model diet and eight per cent was added to account for cost of salt, spices, condiments and sauces. NSS data indicates the same percentage for these food items. An additional 5% has been added to account for wastage and spoilage in the preparation and storage of food.

8.7. Local food prices and cost of Model Diet

As is evident, cost of a model diet depends on the prices of the food items that constitute it.

In case of Chhindwara, in-depth interviews with 68 farmers and other respondents revealed that the workers/farmers shop primarily at the weekly markets. Given that houses and villages are spread out, residents buy most of their food and other necessities from the nearest weekly *haat* (see Picture 1 below). Occasionally they purchase some of the daily essentials from small shops located in the village. None of these shops sell fruits, vegetables or cereals. It is a common practice found among the villagers to buy most food items on a weekly basis. The field team made repeated visits to four separate weekly markets where there are a few permanent stores selling groceries and a large wet market. The team visited around 30 stores located across the four blocks to get estimates of prices of cereals, tea, oil and sugar. Prices of milk were collected from 15 dairies and prices of meats from 13 shops and prices of eggs were collected from eight shops. Prices of vegetables and fruits were collected from 30 vendors who put up their wares in weekly markets.

In Ratlam district, villagers typically shop in the market area in the nearest town (see Picture 2 below). A few villages had small local shops selling toiletries, tobacco, and packaged food (like biscuits, chips, tea leaves, cooking oil). These shops did not carry major food items such as cereals, pulses, fruits, vegetables and dairy products. The

market area where the farmers shop comprises a mix of departmental stores¹⁴, wholesale shops, *kirana* shops, standalone shops and temporary wet markets (see pictures below). The field team visited 18 market areas in this district. Price of cereals, tea, sugar and oil were obtained from departmental stores and kirana shops for different qualities and quantities of the products. Prices of fruits and vegetables were gathered from temporary wet markets, street vendors and permanent establishments. Prices of milk and eggs were collected from kirana shops, departmental stores, and dairies. There were fewer shops selling meat in the main market; the field team visited a few standalone meat shops located near each village. In total, prices were collected from about 65 price points for each of the different food items included in the model diet.

Table 2.1.2(a) and table 2.1.2 (b) describe types of markets where residents of the two study districts typically shop for food.

Table 2.1.2 (a). Markets in Chhindwara where rural residents typically shop for food

Food item	Wholesale and departmental stores in nearby town	Village Neighborhood shop / Kirana Shops	Street vendors / Wet Markets in Nearby Towns	Weekly markets	PDS store	Produced at Home for Self-Consumption
Cereals – Rice				Yes	Yes	Yes
Cereals – Wheat				Yes	Yes	Yes
Pulses				Yes		Yes
Milk				Yes		Yes
Egg		Yes		Yes		Yes
Chicken				Yes		Yes
Vegetables				Yes		Yes
Fruits				Yes		Yes
Tea/Sugar / Oil		Yes		Yes		

¹⁴ Retail establishments offering a wide range of consumer goods, in which specialized category of products are stored in different areas of the store.

The following pictures show the markets in Chhindwara:

Chhindwara markets



Street Vendors at Weekly Markets in Chhindwara



Weekly market with several vendors selling different food items



Street vendor selling groceries in the weekly market

The following pictures are taken from the markets in Ratlam:

Ratlam markets



Kirana shop in a village



Town market – Shivgarh in Ratlam district



Another Kirana shop for villagers



Street vendors selling fruits

Table 2.1.2(b). Markets in Ratlam where rural residents typically shop for food

Food item	Wholesale/ Departmental Shops / Standalone Shops in Nearby Town	Village Neighbor- hood shop / Kirana Shops	Street vendors / Wet Markets in Nearby Towns	Weekly markets	PDS store	Produced at Home for Self- Consumption
Cereals	Yes				Yes	Yes
Pulses	Yes					
Milk	Yes					Yes
Egg	Yes	Yes				Yes
Chicken	Yes		Yes			Yes
Vegetables			Yes			Yes
Fruits			Yes			
Tea/Sugar/ Oil	Yes	Yes				

On the basis of food price data thus collected, the median price per kilo was obtained for a variety of food items. Food items that were widely available, commonly consumed, sold in reasonable sizes, and relatively inexpensive were selected to include in the model diet for Chhindwara and Ratlam districts. The prices of food items which are mainly self-produced and self-consumed were determined on the basis of prices of the same prevailing in the market. We assumed that no food is obtained from the Public Distribution system (PDS) when costing our model diet, because the people we spoke to in both study districts expressed concerns that the quality of food grains obtained through PDS was not good enough for consumption; a few even stated that the lot received from the PDS is used to feed their animals.¹⁵

9. MODEL DIET

The model diets, which were prepared using the Anker Methodology and adjustments discussed in the previous section, are presented in Table 2.2(a) and 2.2(b). The model diets are similar for the two districts, except the choice of fruits included as well as the quantity of meats and eggs and milk. The prices of food items differed in the two study districts, and therefore the cost of food also differed. Prices of cereals, tea, milk, and meat were more expensive in Ratlam compared to Chhindwara, whereas prices of vegetables and fruits, except tomatoes, were similar or slightly lower in Ratlam. Two separate model diets have been prepared.

¹⁵ The Public Distribution System (PDS) is an Indian Food Security System established under the Ministry of Consumer Affairs, Food and Public Distribution. The State Governments are responsible for distribution of commodities – primarily wheat, rice, sugar and kerosene – to eligible households through fair price shops. The PDS in India faces a number of challenges such as incorrect identification of beneficiaries, leakage of food grains (both transportation leakages and black-marketing by fair price shop owners), lack of storage facilities and rotting of food grains, among others.

Table 2.2(a). Model diet for Chhindwara

Food group	Food item	Edible grams	Purchased grams	Cost per kilo	Cost
1. Cereals and grains	Wheat	337	337	20	6.74
	Rice	98	98	30	2.95
	Maize	19	19	18	0.34
2. Roots and tubers	Potato	53	59	25	1.48
3. Pulses, legumes, beans	Arhar / Toor	36	36	80	2.88
4. Milk	Milk	187	187	40	7.47
5. Eggs	Chicken egg	13	15	200	2.95
6. Meats & fish	Chicken	12	16	140	2.24
7A. Dark green leafy vegetables (GLV)	Spinach	41	52	35	1.81
7B. Other vegetables	Cauliflower	41	55	20	1.10
	Brinjal	41	51	20	1.02
	Tomato	41	41	35	1.45
	Onion	41	46	30	1.38
8. Fruits	Orange	41	57	40	2.26
	Banana	41	65	37	2.42
9. Oils & fats	Oil (soybean)	27	27	140	3.80
10. Sugar	White sugar	30	30	40	1.20
11. Nonalcoholic beverages	Tea	1.8	1.8	200	0.36
Total cost of model diet excluding additional costs indicated below					43.84
Total cost of model diet including additional costs indicated below					54.80
Percentage added for salt, spices, sauces, and condiments					8%
Percentage added for spoilage & waste					5%
Percentage added for variety					12%

Table 2.2(b). Model diet for Ratlam

	Food item	Edible grams	Purchased grams	Cost per kilo	Cost
1. Cereals and grains	Wheat	335	335	28	9.38
	Rice	98	98	35	3.44
	Maize	19	19	17	0.32
2. Roots and tubers	Potato	53	59	30	1.77
3. Pulses, legumes, beans	Arhar / Toor	36	36	100	3.59
4. Milk	Milk	213	213	50	10.67
5. Eggs	Chicken egg	6	7	160	1.09
6. Meats & fish	Chicken	6	8	150	1.20
7A. Dark green leafy vegetables (GLV)	Spinach	41	52	20	1.03
7B. Other vegetables	Cauliflower	41	55	20	1.10
	Brinjal	41	51	20	1.02
	Tomato	41	41	60	2.48
	Onion	41	46	30	1.38
8. Fruits	Guava	41	46	30	1.38
	Banana	41	65	30	1.94
9. Oils & fats	Oil (soybean)	27	27	140	3.80
10. Sugar	White sugar	30	30	40	1.20
11. Nonalcoholic beverages	Tea	1.8	1.8	280	0.50
Total cost of model diet excluding additional costs indicated below					47.29
Total cost of model diet including additional costs indicated below					59.11
Percentage added for salt, spices, sauces, and condiments					8%
Percentage added for spoilage & waste					5%
Percentage added for variety					12%

Cost of the model diet for rural Chhindwara is Rs. 54.80 per person per day compared to Rs. 59.11 for a similar model diet for rural Ratlam. Therefore, the cost of food per month for a family of 4.5 in Chhindwara is Rs. 7,502 (USD 99.3) and in Ratlam is Rs. 8,092 (USD 107.1).

While estimating the cost of food, the research team was conscious of the Public Distribution System (PDS) that exists in India, especially for the benefit of the BPL population. The public distribution system (PDS) of essential commodities (food grains, kerosene and sugar) in India during the period of war and subsequently during the acute food shortage in the 1960s. Thanks to the Green Revolution, agricultural production of the country grew and the outreach of PDS was extended in the 1970s and 1980s to areas across the country especially where incidence of poverty was high. In 1992, PDS was revamped to ensure that minimum quantities of food grains, kerosene and sugar reached the poor (Below Poverty Line) at 50% of the cost.

In 2000, PDS was reorganised again targeting the poorest segments of the BPL population. The poorest of the poor families from amongst the BPL families were identified within each state and food grains (rice and wheat) were distributed at a highly subsidized rate (@Rs. 2/- for wheat and @Rs. 3/- for rice). In 2001, states/UTs were allowed the flexibility in the matter of fixing retail prices of the commodities distributed through the PDS. The criteria used to identify those who live below the poverty line (BPL) vary from state to state and between urban and rural locations. As approved by the government of India, the annual income of the household cannot exceed Rs. 27,000 to qualify as BPL.

It is certainly pertinent to note here that the monthly living income that has been estimated in December 2021 in the report for farmers / workers of rural Chhindwara district is Rs. 19,241 and Rs. 20,450 for rural Ratlam district (MP). These amounts are clearly above the annual income which have been notified for qualifying a household as BPL and therefore will not be eligible for PDS. At the same time, it should be mentioned here that the research team also came across respondents who qualified for PDS, but were unhappy with the irregularity of availability and quality of the products received. Some of them even said that the quality of the food grains received through the PDS was not fit for human consumption and hence used it to feed domestic animals.

10. NORMS FOR ACCEPTABLE HEALTHY HOUSING

The second most important dimension that contributes to decent living anywhere, including rural Madhya Pradesh, is the quality of housing. Therefore, cost of housing becomes a major component of the cost of decent living. We estimate the cost of basic but acceptable healthy housing by first setting minimum standards for housing for a typical family with 4.5 members. The local healthy housing standard is based partly on (i) international minimum housing standards (see Anker and Anker 2017); (ii) partly on local housing conditions; and (iii) partly on housing norms as prescribed by the Government of India. The international as well as local norms require, apart from the size and physical condition of the dwelling unit, provision of basic services such as potable water, good sanitation, good drainage and electricity.

A good percentage of India's population lives in rural areas and majority of them live in kutchas¹⁶ (non-permanent) houses, which do not often meet acceptable hygienic conditions. A large percentage of the economically weaker sections of the Indian population live in dwellings which do not meet the minimum international or national standards.

16 A kutch house is a temporary and makeshift structure usually made of mud and straw.

To ensure healthy and acceptable minimum standards of housing, international organizations such as WHO, FAO, ILO and UN-HABITAT recommend access to: (i) privacy; (ii) security; (iii) hygiene; (iv) safety; (v) safe drinking water; (vi) sanitary toilet; and (vii) fire and electrical safety. According to Anker and Anker (2017), acceptable/adequate housing should have the attributes of (i) durable structure, (ii) sufficient living space, (iii) access to safe water, (iv) access to sanitary toilet and washing facilities, (v) adequate lighting, (vi) adequate ventilation, (vii) adequate space for food storage, (viii) separation from animal quarters, and (ix) protection from cold, damp, heat, rain, wind or other threats to health, structural hazards, and disease vectors. Accordingly, an acceptable housing cannot be located in a slum, unsafe area, hazardous area, area without refuse disposal, area without site drainage, or an area lacking emergency services.

Taking the above international norms and the local conditions into account, the Bureau of Indian Standards (BIS), Government of India (BIS, 2016) has evolved the National Building Code of India. It is a comprehensive guideline for regulating construction activities, including residential houses, across the country. It serves as the basic model code stipulating general building requirements, safety aspects, structure of the building, materials used, plumbing services, sustainability, etc.

Based on the norms discussed above, which also meet the minimum international standards for healthy and decent housing, the following standards are accepted for our healthy housing in rural MP:

1. Minimum area of 48 square meters (517 sq. feet) of living space, or 53.8 square meters (579 sq. feet) of built area
2. Minimum two rooms (living room and one bedroom); in addition to separate kitchen or cooking area inside the house
3. Sufficient clearance above the ground
4. Floor made of cement or mosaic
5. Walls made of concrete, burnt brick, un-burnt brick, wood, stone
6. Roof made of burnt brick, concrete, stone, tiles, metal sheets
7. Ceiling with a minimum height of 2 meters
8. Flush toilet - even if shared, pit latrine with slab
9. Water from a safe source, hand pump or well located close to home
10. LPG, PNG, firewood as cooking fuel
11. Electricity (supplemented by possibly kerosene) as standard source of lighting
12. House is maintained in a reasonably good condition

Data from Census (2011) classifies the condition of houses into three universal categories of (a) good, (b) liveable and (c) dilapidated. A house in good condition is defined as one which is in fairly good condition and does not require immediate repairs; while a house in liveable condition is one which needs minor repairs; and a dilapidated house is one which shows signs of decay or is breaking down, requiring major repairs. Table 2.3.1 below describes the housing conditions in rural areas at all-India level, in rural Madhya Pradesh, and in the rural study districts of Chhindwara and Ratlam. Forty six percent of houses in rural India at the national level were reported to be in good condition, while 47.5% were in liveable condition and 6.5% were in a dilapidated state. The situation is somewhat similar in rural Madhya Pradesh with 47.5% of houses in good condition, 48.5% in liveable condition, and 4.5% of houses in dilapidated condition. Chhindwara district reported 49.1% of rural houses in good condition, 46.1% in liveable condition, and 4.8% of houses in dilapidated condition. The corresponding numbers for rural houses in Ratlam district were similar at 47.8%, 49.2%, and 3%. The urban scenario, both at the national level and in Madhya Pradesh, is slightly better.

The materials used for most houses in rural India do not meet the required safety standards. Thirty seven percent of houses in rural areas at the national level use hand-made tiles or grass or bamboo for the roof. The percentage of houses which uses unacceptable material for roofing is much higher at 60% in rural Madhya Pradesh. While 52% of the houses in rural areas at the national level were classified as permanent, only 33% of houses in rural Madhya Pradesh were classified as permanent and even lower percentages in the study districts – 31% for Ratlam and 19% for Chhindwara. In rural India, 62% of the houses use mud for flooring, including some of the houses with pucca roof and walls. The percentage of houses with mud floor is high for rural MP as well as the two study districts at more than 80%. In fact, 68% of the houses in rural India, and more than 85% in rural MP, including study districts, did not have proper toilet facility. It is disheartening to note that less than 5% houses in rural MP have access to treated tap water, and more than 40% of the houses do not have access to electricity.

Table 2.3.1. Housing conditions in rural India, rural Madhya Pradesh, and rural areas of study districts of Ratlam and Chhindwara and our healthy housing standard

Characteristics	India (Rural) %	MP (Rural) %	Ratlam (Rural) %	Chhindwara (Rural) %	Comments on our local healthy housing standard
Condition of House					
Good	46.0	47.5	47.8	49.1	House should be in reasonable condition
Livable	47.5	48.5	49.2	46.1	
Dilapidated	6.5	4.5	3.0	4.8	
Structure					
Permanent (concrete/bricks/zinc)	52.0	33.4	30.6	18.6	Temporary or <i>kutch</i> a houses are not acceptable
Semi-permanent (either wall or roof not permanent)	30.1	55.6	62.5	75.4	
Temporary (thatch roof & sundried bricks)	16.7	10.5	6.3	12.0	
Roof					
Hand Made Tiles	16.9	49.7	34.6	50.2	Roof made of Burnt brick/ Concrete / Stone/ Tiles/ Metal sheets acceptable
Concrete	18.5	9.4	8.7	10.0	
Machine made tiles	9.7	8.4	19.7	27.8	
Burnt Brick	7.2	0.6	0.3	0.2	
Stone	9.3	11.5	5.4	0.8	
G.I./Metal/Asbestos	16.7	8.3	23.5	4.2	
Thatch / Grass / Bamboo	20.7	10.7	4.8	6.1	
Other (Plastic/ polythene)	1.0	1.3	2.9	0.7	

Characteristics	India (Rural) %	MP (Rural) %	Ratlam (Rural) %	Chhindwara (Rural) %	Comments on our local healthy housing standard
Floor					
Cement	24.9	11.9	7.2	16.9	Floor made of Cement, Mosaic, Stone or Wood acceptable
Burnt Brick	2.6	1.0	0.8	0.5	
Earth/dung / mud	61.7	82.5	81.5	80.7	
Wood/bamboo	1.0	0.2	0.2	0.1	
Stone	5.9	2.5	6.1	1.1	
Mosaic/Floor tiles	3.6	1.8	4.2	0.6	
Other (specify)	0.3	0.1	0.1	0.1	
Wall					
Concrete	1.8	0.5	0.5	0.7	Walls made of Concrete/ Burnt brick/ un-burnt brick / wood/ stone acceptable
Wood	1.0	1.0	0.3	1.3	
Mud/Unburnt brick	28.2	56.5	60.2	72.4	
Burnt brick	40.5	28.2	26.1	20.1	
Bamboo/grass/thatch	12.8	4.5	3.8	3.1	
Stone (both packed and not packed with mortar)	13.9	8.7	8.4	1.9	
Other (Metal/Asbestos sheets/ plastic/ polythene)	1.8	0.3	0.6	0.6	
Toilet facility					
Pit latrine with slab	8.2	1.8	1.3	1.1	Flush toilet, even if shared or a Pit latrine with slab acceptable ¹⁷
Pit latrine without slab/open pit	2.4	0.8	0.6	0.8	
Flush toilet	19.4	10.3	11.4	10.3	
No facility, bush	67.3	86.4	86.2	87.5	
Public toilet	1.9	0.5	0.4	0.2	
Other (Night soil into open drain or services by animals or humans)	0.8	0.2	0.1	0.1	

17 There is a government drive to encourage use of toilets, private or public, in rural areas. Most of the toilets, wherever constructed, are not usable primarily due to water shortages and poor maintenance.

Characteristics	India (Rural) %	MP (Rural) %	Ratlam (Rural) %	Chhindwara (Rural) %	Comments on our local healthy housing standard
Number of rooms (or number of bedrooms)					
No exclusive room	4.3	2.8	4.1	0.1	Minimum two rooms (living room and one bedroom); in addition to separate kitchen or cooking area inside the house acceptable if well ventilated
1	39.4	44.5	55.6	26.9	
2	32.2	32.6	28.1	36.0	
3	12.7	11.5	6.9	28.2	
4+	11.4	8.5	5.3	8.8	
Drinking Water source					
Tap water (treated source)	17.9	4.7	7.1	9.5	Water from a safe source, hand pump or well or pipe located close to home is acceptable
Tap water (untreated source)	13.0	5.3	7.7	15.0	
Borehole/tube well	8.3	4.9	10.4	3.2	
Handpump	43.6	58.3	52.8	41.7	
Protected well	1.5	1.0	0.9	1.3	
Unprotected well	11.8	24.0	18.5	27.1	
Unprotected spring/river/lake	2.6	1.6	2.4	1.9	
Other (specify)	1.4	0.3	0.2	0.3	
Electricity - Lighting source					
Electricity	55.3	58.3	64	74.3	Electricity as standard source of lighting is acceptable ¹⁸
Paraffin/kerosene	43.2	40.9	35	25.0	
Solar energy	0.5	0.3	0.1	0	
Other (specify)	0.4	0.3	0.4	0.5	
No lighting	0.5	0.2	0.5	0.3	

18 On government records, electricity has been provided to all households in all villages. However, we found that the connection is temporary without installing electricity meter. The local official collects a lump sum amount of money as electricity charges for minimum and intermittent supply

Characteristics	India (Rural) %	MP (Rural) %	Ratlam (Rural) %	Chhindwara (Rural) %	Comments on our local healthy housing standard
Cooking fuel					
Wood	62.6	78.6	78.9	89.8	LPG/ PNG /firewood as cooking fuel is acceptable
Charcoal/coal/lignite	0.8	0.0	0.0	0.1	
Kerosene	0.7	0.2	0.3	0.3	
LPG/PNG	11.4	3.5	4.8	5.3	
Other (Crop Residue, Cow dung Cakes, electricity, biogas)	24.3	17.5	15.8	4.3	
No cooking	0.2	0.1	0.1	0	
Consumer durables					
Radio/transistor	17.3	13.0	8.7	13.4	Availability of private vehicle (motorbike) and mobile phone is necessary for decent standard of living – Low percent of motorbike in 2011 is not indicative of situation in 2021
Motorbike or scooter	14.3	12.0	15.1	11.7	
Car/jeep/van	2.3	1.1	0.8	1.0	
Television	33.4	18.6	20.0	20.7	
Computer/laptop	5.2	3.2	2.7	2.8	
Mobile Phone/landline phone	54.3	35.2	38.6	25.5	
Bicycle	46.2	36.4	30.9	34.2	

Source: Census (2011)

10.1. Housing Conditions in Rural MP

The research team visited 143 houses in the 40 study villages (20 villages in each study district) chosen from four blocks of Chhindwara district and four blocks of Ratlam district. These study villages were chosen on the basis of recommendations made by NGOs who have been working closely with villagers in these areas. Individual houses visited within the study villages were chosen randomly, as far as possible, but ensured that they were located in different areas of the village and also represented different communities. In several of the villages, if not all, different communities (social groups) lived in separate (segregated) parts of villages. The residents/ owners of these houses were either land owning cultivators (mostly owning small sized farms ranging from 1.5 to 5 bighas¹⁹, and a few holding land between 6 to 30 bighas). Some respondents were landless labourers who worked on a daily wage. In many cases, small farmers also worked as daily wagers during several months of the year, especially when it was not possible to cultivate land primarily due to non-availability of irrigation and scarcity of water.

19 Bigha is a common unit of measurement of land size in India. 1 hectare=approximately 4 bighas of land.

Overall, the quality of material used, the condition of houses and the surrounding environment are not satisfactory. It was heart-rending to see human beings and domestic animals (cattle, goats and chicken) living in close proximity to each other sharing the same space. Most houses did not fulfil minimum safety norms. Large percentage of houses did not have sufficient area of living space; only a few had permanent structures with basic amenities of sanitation and water supply. In majority of cases in Chhindwara and Ratlam districts, a single unit was occupied by four or five members of the family (husband, wife and two-three unmarried children). It is common practice among the tribal communities in Madhya Pradesh, that the grown up child (son/ daughter) moves out to a new dwelling unit soon after marriage. However, some houses (belonging to non-tribal communities) were inhabited by more than five persons, who lived in joint families.

Table 2.3.2 below provides a brief summary of the poor condition of houses that the research team visited in the two study districts. The condition of houses in rural Ratlam was found to be relatively better compared to that of houses in rural Chhindwara. A majority of houses in the study villages (70% in Chhindwara and 69% in Ratlam) had kutcha or semi-pucca structure (primarily made of thatch, sun-dried bricks and temporary roof). However, a much larger percentage (88%) of houses visited in Chhindwara were found in unliveable or dilapidated condition compared to 40% in Ratlam district. Similarly, 79% of houses in Chhindwara and 67% of houses we visited in Ratlam did not have roof made of concrete or similar permanent material. Most houses used a combination of metal sheet, asbestos or cement sheet for the roof. As much as 77% of houses visited in rural Chhindwara and 58% in rural Ratlam did not have walls made of concrete or brick. Mud is the most commonly used material for walls of the houses visited in the study. Most of the houses (76% in rural Chhindwara and 71% in rural Ratlam) have mud floors. A few houses were found having walls and roof made of concrete.

More than 50% of houses visited (52% in Chhindwara and 53% in Ratlam) had a total area ranging between 200 sq. ft. to 400 sq. ft., with less than 2 rooms and no separate kitchen. A good many houses we visited (30% in Chhindwara and 37% in Ratlam) did not have access to toilet facility, private or public. Most people defecated in open fields. The houses which had toilet facilities with pit latrines but without slabs were found to be in poor condition. The overall quality of sanitation, drainage and safety conditions in the neighbourhood were extremely poor. Most houses did not have adequate ventilation.

Table 2.3.2. Conditions of houses visited by the field team

	Chhindwara	Ratlam
Number of Houses Visited	43	100
% of kutcha or semi-pucca houses	70%	69%
% of dilapidated houses	88%	40%
% of houses without a roof made of concrete or similar material	79%	67%
% of houses with a mud floor	76%	71%
% of houses without a concrete or a brick wall	77%	58%
% of houses with less than 2 rooms	52%	53%
% of houses without a toilet (inside or outside)	30%	37%

Source: Authors calculations based on primary research

The pictures below illustrate the poor condition of houses and the unhygienic environment in which many villagers of Chhindwara and Ratlam live. Pictures 3a-3d show the general condition of houses in rural Ratlam and the state of sanitation in the neighbourhood, while Pictures 3e and 3f show a pucca and a semi-pucca house respectively in the same district. Pictures 4a-4f depict the poor condition of average houses in rural Chhindwara, while picture-4g is a pucca house built in one of the villages with money received from a public housing scheme.

Ratlam houses



Picture-3a: View of a hamlet in rural Ratlam



Picture-3b: A typical house in rural Ratlam



Picture-3c: Another view of a hamlet in rural Ratlam



Picture 3d: A typical Kutcha house in rural Ratlam



Picture 3e: A pucca house in rural Ratlam



Picture 3f: A semi-pucca house in rural Ratlam

Chhindwara houses



Picture-4a: View of a hamlet in rural Chhindwara



Picture-4b: Another view of a hamlet in rural Chhindwara



Picture-4c: A typical house in rural Chhindwara



Picture-4d: Another typical house in rural Chhindwara



Picture-4e: A third typical house in rural Chhindwara

Chhindwara houses



Picture-4f: A fourth typical house in rural Chhindwara



Picture-4g: A pucca house in rural Chhindwara built with partial funds from PM's housing scheme

11. COST OF HOUSING

Most poor people in rural India live in their own houses, as compared to relatively more affluent sections of Indians in urban India that might live in houses on rent. According to the Household Survey on India's Citizen Environment & Consumer Economy (ICE 360°) conducted in 2016 and as reported by Bhattacharya (2016), 97% of households belonging to the bottom-income quintile (that is, bottom 20% of India's income distribution) live in their own homes, while only 81% of the households in the top-income quintile (top 20% of India's income distribution) live in their own homes. According to NSS 2011-12 (NSSO, 2014), 91.1% of rural MP and 65.9% of urban MP owned their own houses.

11.1. Rental Equivalent Value of Basic Acceptable Owned Housing

The fact that more than 90 percent of residents in rural India, including those in rural MP, live in their own houses means that it is rare that a farmer or rural worker with or without owning land lives in a rented house. During the field visits, the research team did not find a single case of rented house in the forty villages (20 in Chhindwara district and 20 villages in Ratlam district) that were included in the study. Given the absence of well-established rental markets, and non-availability of rental expenditure data in consumption expenditure surveys, it is not possible to assess housing cost based on rental value. Instead, we have relied on the user cost value of housing, as recommended by Anker and Anker (2017). For this purpose, the monthly user cost of a basic house is estimated, which meets acceptable healthy housing standards. The user cost is estimated using the construction cost of the house and assumptions of its expected service life and cost of maintenance. The standard (recommended) 53.8 sq. meters (579 sq. ft.)²⁰ of built area of living space has been used for a decent house. The cost of construction was determined on the basis of information provided by local people who have constructed houses in recent past. The cost of construction was also orally shared by contractors in the area. Members of the NGOs who had

²⁰ The living space of 48 sq. meters is equivalent to 53.8 sq. meters of built-up space considering an additional 12% to account for thickness of outer and inner walls (Anker and Anker 2017).

themselves, or people they knew, constructed houses in or around rural Chhindwara and rural Ratlam, further corroborated these estimates.

The research team could not procure written estimates of the cost of construction from contractors, as they were not keen to do so. However, several (at least 5-6) respondents each in both Chhindwara and in Ratlam districts, who had constructed pucca houses recently, were specifically asked about the cost. Some of these respondents had built part of the house using the funds received under housing scheme promoted by the Prime Minister (The Pradhan Mantri Awas Yojana) or the Chief Minister (Mukhya Mantri Awas Yojana). An eligible applicant received a maximum of Rs. 1,30,000 under these schemes, an amount which is far from adequate to construct a house fulfilling the minimum standards.²¹ In fact, many such houses were only partly completed as the recipients did not have sufficient (supplementary) private funds to complete the construction. Based on the amount spent by the respondents for the quantum of area constructed, the local estimate in both the study districts of rural Chhindwara and in rural Ratlam ranged from Rs. 1,100 to Rs. 1,300 per sq. foot. This variation in range of cost could be explained partly because of difference in the quality of material used and partly due to lack of accuracy in calculating the labour cost. The cost of construction quoted by the contractors and members of the local NGOs was Rs. 1,200 per sq. ft., which has been accepted for the purpose of our calculation. Moreover, the construction cost for rural housing estimated by the Central Public Works Department (CPWD, 2021),²² is much higher at Rs. 17,640 per sq. meter (or Rs. 1,639 per sq. ft.). The local estimate of Rs. 1,200 per sq. foot is 27% lower than central government estimate provided by the CPWD.

Therefore, based on local cost estimates, the cost for constructing a house with a built up area of 579 sq. ft (53.8 sq. meters)²³, with two rooms, a separate kitchen, toilet and bathing facility outside the house with basic parameters of safety and durability has been calculated to be Rs. 694,800 (i.e., 579 sq. ft. x Rs. 1,200 per sq. ft.). The annual user cost is further calculated by assuming the depreciation on a straight-line method plus the costs of maintenance and interest. The interest amount is assumed as cost of borrowing or the opportunity cost of the invested funds. Depreciation cost has been calculated on the basis of the average service life of 50 years for a house built with concrete in rural India. This is the rule of thumb for middle-income countries like India as suggested by Anker and Anker (2017) which is similar to the 50-60 years for India (Gupta, 2020).

Assuming a service life expectancy of 50 years and 2% for annual maintenance (Anker and Anker, 2017), the average monthly user cost of housing has been calculated and presented in table 2.4.1. The cost of interest rates has been ignored, primarily because an effective financial system is absent in rural areas. Moreover, it is a common practice in rural India that most farmers/workers build their houses either out of their own savings or from inherited wealth or from the partial grant received under the government housing scheme.

Based on the aforesaid premises, the user cost for housing has been calculated (see table 2.4.1) to be Rs. 2,316 per month.

21 Our in-depth interviews with residents in Chhindwara suggested that in addition to this amount, they spent Rs. 300,000 – 400,000 to upgrade their existing house to a pucca one. These houses, as described and illustrated in the pictures in the previous section, are significantly below acceptable standards.

22 We use the plinth area rates for 2021. Plinth Area is built up covered area of a building measured at the floor level including balconies. Plinth area rates published by Central Public Works Department (CPWD) is a technical document for preparation of preliminary cost estimates of projects and development works by engineers in the construction industry. This is also used by other organisations, PSUs, builders, architects and valuation experts.

23 The living space of 48 sq. meters is equivalent to 53.8 sq. meters of built-up space considering an additional 12% to account for thickness of outer and inner walls (Anker and Anker 2017).

Table 2.4.1. User cost of decent housing based on construction cost, service life expectancy, and maintenance

Built up area	53.8 sq. meter or 579 sq. ft.
Rate per sq. ft. (Rs.)	1,200
Cost of Construction	694,800
Life expectancy (Years)	50
Annual Depreciation Cost (Rs.)	13,896
Annual Maintenance Cost (%)	2.0%
Annual Maintenance Cost (Rs.)	13,896
Total Annual Cost (Rs.) Depreciation + Maintenance	27,792
Total Monthly Cost (Rs.)	2,316

Source: Authors Calculations

12. UTILITIES AND OTHER HOUSING COSTS

Cost of water, electricity, cooking fuel and lighting are added to assess a realistic cost of housing.

12.1. Cost of water

It is difficult to calculate the cost of water as it is accessed free of cost from the nearest source. At the same time, it is reasonable to consider the labour cost involved in collecting water. In most cases, the source of water is the hand pump or the common well located in some parts of the village. We also came across many cases where villagers fetched water from the river, which was not very close either.

About 20 per cent of villagers we spoke to in Chhindwara reported spending one-two hours a day and a lot of physical effort to collect water from the nearest source which was located at a distance of 500 meters - 2 kilometres from their residence. The cost of collecting water involving manual labour of one hour per day is calculated to be Rs. 22.5 per day or Rs. 684 per month based on the daily wage rate of Rs. 180.²⁴ Assuming 20 per cent of households have to go through this ordeal, and the remaining have a handpump in their vicinity, the monthly imputed cost of water is calculated to be Rs. 137 in Chhindwara.

In Ratlam, on the other hand, most homes we visited had access to tap water outside their house or had a hand pump in their vicinity. It is only during extreme summer months that adequate quantity of water is not available from these sources and has to be fetched from far away areas. Using the same calculations as above, (i.e., Rs. 684 per month), and assuming almost everyone needs to depend on faraway sources for 2 months in the year, the imputed monthly cost is Rs. 114 in Ratlam.

24 This is the prevailing wage for a low paid menial job in the area, based on our discussion with the respondents.

12.2. Cost of Lighting

Approximately 74% of rural households in Chhindwara and 64% in rural Ratlam have access to electricity as a source of lighting, while 25 per cent in Chhindwara and 35 per cent in Ratlam used kerosene for lighting (Census, 2011). Every household that the research team visited had electricity connection; but the power supply was minimal and often interrupted and availability varied from 10-18 hours per day. According to NSS 68th Round 2011-12 (NSSO, 2014) household expenditure data, Rs. 28.64 per person per month was spent on electricity, which is equivalent to Rs. 128.9 for a family of 4.5. Taking the inflation into consideration, this amounts to Rs. 218.2 in 2021. Electricity supply in the houses we visited almost exclusively was used only to light 1-2 bulbs in addition to a table fan and to charge mobile phone. The cost of electricity per household for the 43 houses in Chhindwara and 100 houses in Ratlam we visited ranged from Rs.100 to 200 per month. To ensure that each room has a bulb and a fan, and there is sufficient power to charge mobile phones, we assumed the monthly electricity cost to be Rs. 300 per month.

12.3. Fuel for cooking and for heating in winter

Ninety percent of households in rural Chhindwara and 79% in rural Ratlam use firewood for cooking. Moreover, 4.3 per cent in Chhindwara and 15.8 per cent in Ratlam use cow dung cake or crop residue, while only 5.3 per cent in Chhindwara and 4.8 per cent in Ratlam use LPG for cooking (Census, 2011)

All the households that the research team visited in Chhindwara district used firewood as a source of fuel for cooking as well as for heating in winter months. In Ratlam, in addition to firewood, cow dung cakes were popular. Although many households had received gas stoves under the Pradhan Mantri Ujjwal Yojana, a scheme of the Ministry of Petroleum & Natural Gas for providing LPG connections to women from Below Poverty Line (BPL) households, actual use of LPG cylinders was limited. The high cost of refilling the cylinder, on the one hand, and availability of firewood from the forest, on the other, are major reasons for the negligible use of LPG for cooking.

It was not possible for most of the respondents in Chhindwara to calculate the cost they incurred for cooking fuel as wood was available free of cost at the nearby forest. A report by PPAC and CRISIL (2016) suggests that easy availability of firewood in the vicinity of forests is a primary barrier to adoption of LPG. In fact, Madhya Pradesh is among the top five states where over 40% of the households procure firewood for free. However, the high price of refilling LPG cylinder cannot be ruled out as an important reason for the continued use of wood for the use of cooking and heating the house during winter months.

Because firewood is collected for free from the forests, and cow dung cakes are prepared for free at home, and LPG is not widely used because of its cost, we estimated fuel costs in different ways in order to get an idea of what would be reasonable costs for fuel. First, we estimated the cost of LPG for cooking meals. The cost of an LPG cylinder is Rs. 905 (for 14.2 kg), which may last for about a month. But LPG cylinders are rarely used as stated by our respondents, and their use is confined to preparation of tea and in some cases, a quick meal. Second, we estimated the cost of firewood and cow dung cakes if we imputed value to the time taken to collect firewood and prepare cow dung cakes. The market price for firewood varied. In Chhindwara, firewood was not commonly sold in the markets. However, key informants indicated that the price of firewood in Chhindwara varied between Rs. 600 per quintal and Rs. 1,100 per quintal depending on the quality of wood (how dry or wet it is). Using the lower bound price to impute fuel costs and assuming on an average approximately 5 kg of firewood is consumed per day to cook two meals for a family, this implies that the value of firewood collected free of cost is worth approximately Rs. 30 per day, amounting to Rs. 913 per month. Since this is not adequate for preparing tea in the morning and for heating in colder months, we increased fuel cost for firewood by 10 per cent to Rs. 1,004 per month.

In Ratlam, most households use cow-dung cakes for cooking. For cooking two meals a day, four pieces of cow dung cakes is calculated to be the typical requirement per day. The cost per cow dung cake in the area varied from Rs. 6 to Rs. 8 per cake. Taking an average price of Rs. 7 per cow dung cake, the daily fuel cost is Rs. 28 and the monthly fuel cost is approximately Rs. 852. In Ratlam, unlike Chhindwara, firewood is sold in the market for an average price of Rs. 600 per quintal. Assuming a requirement of 5 kilograms of firewood to prepare two meals a day, the monthly cost amounts to Rs. 913. The average of these two sources of fuel is Rs. 883. To allow for heating in winter months, we increased this by 10 per cent to Rs. 971.

Thus, monthly utility costs incurred by a household has been calculated at Rs. 1,441 in Chhindwara and Rs. 1,385 in Ratlam. This includes the cost of water (Rs. 137 in Chhindwara and Rs. 114 in Ratlam), cost of lighting (Rs. 300 in both districts), and the cost of fuel (Rs. 1,004 in Chhindwara and Rs. 971 in Ratlam). This amount was validated by the secondary data available in the 68th round of the National Sample Survey (NSSO, 2014) which reports the amount spent on fuel and light by an average household in rural MP. According to the 2011-12 NSS data, the average monthly per capita expenditure on fuel and light in rural MP is Rs. 114.02. If we multiply this by a family size of 4.5 and update it for inflation to 2021, we get Rs. 868.5 per month which is only a little lower than our estimate. This may be lower because the actual expenditure in the NSS data does not include the imputed value of firewood or cow dung cakes which have not been purchased from the market but produced at home or available free of cost in nearby forest areas.

12.4. Summary of Housing and Utilities Costs

The utilities and housing costs are summarized in Table 2.5.1.

The monthly housing cost for Chhindwara has been calculated to be Rs. 3,757 per month for the reference family, which includes the cost of utilities (Rs. 1,441) and housing user cost equivalent value (Rs. 2,316).

The monthly housing cost for Ratlam has been calculated to be Rs. 3,701 per month for the reference family, which includes the cost of utilities (Rs. 1,385) and housing user cost equivalent value (Rs. 2,316).

Table 2.5.1. Total Housing Cost (Rent + Utilities) for decent housing in rural Chhindwara and rural Ratlam

Item	Average Cost per Month (Rs.) for reference family in Chhindwara	Average Cost per Month (Rs.) for reference family in Ratlam
Water	137	114
Lighting	300	300
Fuel	1,004	971
Total Utilities	1,441	1,385
Average Rent (User Cost)	2,316	2,316
Total Housing	3,757	3,701

Source: Authors Calculations.

13. NON-FOOD NON-HOUSING (NFNH) COSTS

Based on the Anker Methodology (Anker and Anker 2017), non-food and non-housing (NFNH) expenses are estimated in three steps as described below.

In step 1, NFNH costs are calculated on the basis of current household expenditure patterns for rural Madhya Pradesh using CMIE Consumer Pyramids Household Survey data for January 2020 (CMIE, 2020).²⁵ First, the ratio between expenditure on food and NFNH is determined for households at the 30th percentile of the household expenditure distribution because such households are likely to be out of poverty, but still living at a fairly basic standard. This is done by taking the average of the ratios for households in the 3rd and the 4th deciles (which is roughly the 30th percentile on average) of the household expenditure distribution for rural Madhya Pradesh. These deciles in the income distribution have been chosen because they should represent expenditures of households above poverty.

Table 2.6.1 shows the percentage share of total expenditure by major expenditure groups for the 3rd and 4th decile of rural Madhya Pradesh households.

In step 2, expenditures on items such as tobacco and narcotics such as pan, that are not considered necessary for a decent living, are eliminated. We assume that 70% of the cost of meals away from home are for the food items in these meals and 30% for services and profit; therefore, we included only 30% of this share in NFNH and moved 70% to food.

The preliminary NFNH to Food ratio for rural Madhya Pradesh for the 30th percentile household is 0.805, i.e. the average of the preliminary NFNH to Food Ratio for the households in 3rd and 4th deciles of the expenditure distribution.

Multiplying the above by the cost of the model diet (Rs. 7,502 for Chhindwara and Rs. 8,092 for Ratlam) for the reference family of 4.5, gives us the preliminary non-food non-housing expenses as Rs. 6,039 for Chhindwara and Rs. 6,514 for Ratlam.

In step 3, important expenditure groups such as healthcare and children's education (which we consider human rights) and other major expenses (such as transportation) are reviewed to assess the adequacy of the funds included in the preliminary NFNH as estimated in step 2 for a decent living. If found insufficient, additional funds are added to ensure availability of adequate funds for these for a decent living.

Post-checks start by determining the share of health care, education and transport allocated in the preliminary estimate of NFNH costs. For this, the ratio of the percentage expenditure on each category as a share of the adjusted NFNH percentage is calculated. Multiplying this ratio by our preliminary NFNH estimate (Rs. 6,039 in

²⁵ Consumer Pyramids Household Survey (CPHS) is a continuous survey administered on a panel of sample households by Centre for Monitoring Indian Economy (CMIE). It delivers fast-frequency data on consumption expenditure of households which are collected thrice every year. We have calculated ratios for a pre-covid month, i.e. January 2020. The consumption expenditure patterns have shifted somewhat to food due to the pandemic. This is reflected by the increase in food expenditures as a share of total expenditure during the pandemic. Thus, we have taken the ratios in the pre-covid period although the consumption expenditure data is available until August 2021.

Chhindwara and Rs. 6,514 in Ratlam) indicates the amount for each expenditure group included in our preliminary NFNH estimate. These calculations and results are presented in in Table 2.6.2 below.

Table 2.6.1. Expenditures by Major Groups as a share of Total Expenditure in rural Madhya Pradesh in January 2020

Expenditure Group	Category	3 rd Decile	4 th Decile
Food and non-alcoholic beverages	Food	49.62%	46.91%
Cooking fuel	Housing	3.83%	4.94%
Alcohol	NFNH	1.04%	0.90%
Tobacco and pan	Excluded	5.24%	4.73%
Clothing & footwear	NFNH	2.16%	3.73%
Rental	Housing	0.16%	0.22%
Services - Electricity	Housing	1.71%	1.65%
Household contents and appliances	NFNH	0.28%	0.54%
Health services	NFNH	0.67%	0.78%
Education	NFNH	1.57%	1.63%
Private vehicle operation	NFNH	8.11%	8.46%
Passenger transport services	NFNH	1.71%	1.64%
Telecommunications	NFNH	3.88%	3.87%
Recreation and Culture	NFNH	0.10%	0.11%
Restaurants and hotels	70%-Food 30%-NFNH	1.27%	1.43%
Miscellaneous expenditures	NFNH	18.65%	18.45%
Adjusted NFNH		38.55%	40.54%
Preliminary NFNH/ Food ratio		0.763	0.846

Source: Authors Calculations based on CMIE (2020).

Table 2.6.2. Calculating amount implicitly included in preliminary NFNH estimate for health care, education, and transport for reference family in Chhindwara and Ratlam

Item	Percentage of total monthly per capita expenditure	Percentage of total NFNH	Amount (Rs. per month) in preliminary NFNH costs of Rs. 6,039 in Chhindwara	Amount (Rs. per month) in preliminary NFNH costs of Rs. 6,514 in Ratlam
Healthcare	0.73%	1.84%	111	120
Education	1.60%	4.05%	245	264
Transport	9.95%	25.18%	1,520	1,640

Source: Authors Calculations based on CMIE (2020).

14. HEALTHCARE POST CHECK

Information collected (by the research team) from the sample of 40 villages of Chhindwara and Ratlam districts indicated that facilities for education and healthcare available to the villagers are far from adequate. We specifically examined the funds needed for adequate healthcare for the reference family and education through secondary school as we consider these to be part of citizen rights.

Almost every respondent met during the field investigation expressed the view that public healthcare in rural Chhindwara and rural Ratlam was unsatisfactory and inadequate. Although public health centres (PHC) have been set up by government authorities at different locations in the villages, doctors and medicines were said to be rarely available at these public clinics. Many of the residents shared humiliating experiences which they encountered with the medical staff of such PHCs. Villagers have been left with little option but to visit doctors at clinics set up by private medical practitioners. The poor and inadequate services of the public (government) healthcare system, which in rural India are free and supposed to be easy to access, are often found inaccessible (See Picture 5). Most villages were found to resort to using private healthcare facilities, paying much more than what they could afford.

In section 2.6 above, the provisional NFNH amount provided for meeting monthly expenses included Rs. 111 per family for healthcare in Chhindwara and Rs. 120 in Ratlam.

During the field investigation in Chhindwara and in Ratlam, the respondents we spoke to were asked about the number of times they visited private clinics and pharmacies as well as the amount they spent on consulting private doctor and the cost of medicines. The research team also visited five private clinics in Chhindwara and 15 in Ratlam to understand the pricing of these facilities.

Health centre in Chhindwara



Picture 5: A locked health centre in Chhindwara District

In Chhindwara, an average amount of Rs. 560 (including the cost of consultation fee, medicines, and tests), was spent per visit for one spell of illness. Assuming four visits per person per year to a medical facility (i.e., every three months), of which one may be assumed to be to a public facility (given reasons above), the annual medical expenditure on routine illness for a family of 4.5 is Rs. 7,560, or Rs. 630 per month. This only takes care of routine illnesses and does not include serious medical situations, which require hospitalisation, incurring major expenditures. It also assumes one visit per year for routine medical visits to a public facility.

In Ratlam, the average expenditure incurred on a single spell of illness was lower at Rs. 482 (including consultation fee, medicines and tests). Taking a similar assumption as above - four visits per person per year to a medical facility, of which one is to a public facility, the annual medical expenditure on routine illness for a family of 4.5 is Rs. 6,511, or Rs. 543 per month which takes care of only routine illnesses and does not include serious medical situations requiring hospitalisation and incurring major expenditures. It also assumes one visit per year for routine medical visits to a public facility.

Table 2.7.1 provides a summary of estimated healthcare costs for a reference family in Chhindwara and Ratlam.²⁶

26 According to the 75th round (July 2017 – June 2018) of the National Sample Survey on Social Consumption - health (NSSO, 2019), of all the people reporting an ailment, 96% received an allopathic treatment, and 3.9% received an AYUSH treatment. Also, 33.7% were treated on medical advice by a government/public hospital, 3% by an NGO run or a charitable hospital, 21.1% by a private hospital, 38.4% by a private doctor in a private clinic and 3.8% by an informal health care provider. Moreover, 48.3% of hospitalizations were in a government/public hospital, 3.7% in NGO-run or a charitable hospital, and 47.9% in a private hospital. The average medical expenditure incurred for treatment during stay at hospital per case of hospitalization for rural Madhya Pradesh was Rs. 2,093 in a public hospital, Rs. 25,086 in a private hospital, and Rs. 14,325 in all hospitals (including the NGO run charitable hospitals). The average medical expenditure per spell of ailment for non-hospitalised treatment was estimated at Rs. 775.

Table 2.7.1. Estimated Healthcare Costs for a Reference Family

Type of provider	Chhindwara			Ratlam		
	Cost per visit	No. of visits per year per person	Total cost	Cost per visit	No. of visits per year per person	Total cost
Public provider						
Consultation Fee	0	1	0	0	1	0
Medicines and Investigations	0	1	0	0	1	0
Private clinic/doctor						
Consultation	70	3	210	103	3	309
Medicines and Investigations	490	3	1,470	379	3	1,137
TOTAL cost per person per year			1,680			1,446
TOTAL cost per family per month (cost per person per year x reference family size)/12 months			630			543

Source: Authors Calculations based on Primary Research.

We estimated above the monthly healthcare expenditures for the reference family of 4.5 persons at Rs. 630 for Chhindwara and Rs. 543 for Ratlam. Given that these are much higher than the Rs. 111 per family for healthcare in Chhindwara and the Rs. 120 in Ratlam included in our preliminary NFNH estimates, the difference (Rs. 519 for Chhindwara and Rs. 423 for Ratlam per month) have been added in the post checks.

15. EDUCATION POST CHECK

According to Census (2011), out of a total of 1,906 villages in Chhindwara district, 1,237 villages have pre-primary schools, 1,727 villages have primary schools, while only 684 villages have middle schools, 256 villages have secondary schools, 187 villages have senior secondary schools and only two villages have degree colleges. However, five blocks of the Chhindwara district have vocational training schools, polytechnic, engineering or management education institutes. Interestingly, this area falls under the political jurisdiction of a leading politician of the state of Madhya Pradesh. On the other hand, 176 villages of Chhindwara district have no educational facility whatsoever.

In Ratlam district, out of a total of 1,053 villages, there are 125 villages which have the facilities of pre-primary school, 1,011 villages have primary schools, 476 villages have middle schools, 106 villages have secondary schools and only 49 villages have senior secondary schools. It is troubling to note that there are no villages in Ratlam district with a degree college in arts, science, commerce, engineering or medical courses. It is also important to note that there are no facilities for a management institute, polytechnic institute, vocational training school, or a formal training centre in the villages of this district. Unlike Chhindwara, which had one special facility for the disabled, no village in Ratlam district have such facility. Moreover, 42 villages are reported to have no education facility whatsoever.

According to the National Education Policy 2020 (Government of India, 2020):

“Education is fundamental for achieving full human potential, developing an equitable and just society, and promoting national development. Providing universal access to quality education is the key to India’s continued ascent, and leadership on the global stage in terms of economic growth, social justice and equality, scientific advancement, national integration, and cultural preservation. Universal high-quality education is the best way forward for developing and maximizing our country’s rich talents and resources for the good of the individual, the society, the country, and the world. India will have the highest population of young people in the world over the next decade, and our ability to provide high-quality educational opportunities to them will determine the future of our country”.

The new national education policy has also re-structured Indian school education into different segments of (1) pre-school + classes 1 & 2 (for ages from 3 to 8); (2) classes 3 to 5 (for ages from 8 to 11); (3) classes 6 to 8 (for ages from 11 to 14); and (4) classes 9 to 12 (for ages from 14 to 18), as against the earlier system of primary, secondary and senior secondary school. Higher education takes place in colleges and universities. School education is not only every child’s right in India but is also compulsory.

What is pronounced as policy and what is practiced in reality do not often match, and education in India is no different. Along with the government, the private sector has always played an important role to promote education in India. However, during the past several years, the government has reduced investment in education as they have done in healthcare in India, leaving much more space and need for the private sector (Chopra, 2021). Despite free education and mid-day meals provided by the government schools in lower classes, private schools, including those in rural areas, have been gaining popularity. In fact, the share of the private sector at all levels of education, including the lower classes, has steadily grown during recent years (Ernst & Young and FICCI, 2014).

Our field investigations in Chhindwara and in Ratlam suggest that the situation is not different in rural Madhya Pradesh. The research team visited at least one government school in each village. Many young children in the villages were not attending schools. A few primary school teachers in the villages told us that 30-40 percent of students had not returned to school after Covid. During the Covid pandemic, schools remained closed. During the covid lockdown, neither village school teachers nor the students and their parents had the necessary infrastructure such as computers and internet for online classes, resulting in a total breakdown of children’s education for nearly two years. After reopening of the school, the mid-day meal scheme has not resumed despite a specific quantity of grains being allocated to the guardians of students who attended school.

The infrastructure facilities and the student-teacher ratio were found to be hugely inadequate to facilitate learning among the young students in both districts of Chhindwara and Ratlam. In all the government primary schools visited in the villages of both Chhindwara and Ratlam, students of different classes/grades were found to be kept in the same classroom primarily because of inadequate availability of space and teachers. Classes from 1 to 5 were found to operate with two rooms and 2-3 teachers (see Pictures 6a-d). Many respondents we spoke to expressed their preference to send their children to private schools, primarily due to poor quality of education available at the government schools of the local areas. Given this scenario, it looks imperative that for decency and effective use of right to education, attendance in private school is required in rural Madhya Pradesh.

Pictures of Schools and Classrooms in Rural MP



6a: Filth around a village primary school



6b: Students of class 1-5 taught by two teachers in two rooms



6c: Students waiting for teacher outside the locked class room till mid-day



6d: Despite the odds, a happy bunch of children sitting in a class room.

The research team visited 14 private schools (4 in Chhindwara and 10 in Ratlam) where respondents enrolled their children. In both the districts, school expenses are progressively higher in higher classes, from primary to secondary to higher secondary. It was also found that private schools were strongly preferred, in comparison to the government schools, by the people of Chhindwara and Ratlam, especially at the secondary and senior secondary levels. The expenditures incurred for schooling in the two districts are summarised below.

In Chhindwara, we found that the median annual expense (based on the 4 schools visited) on schooling was Rs. 10,500 on primary classes, Rs. 16,400 on secondary classes and Rs. 18,400 on senior secondary classes. These amounts included registration fee, examination fee, tuition fee, cost of uniform, books, other learning material and transportation. Transportation constituted a substantial part of the cost, as schools were located at a distance of 5 to 15 kilometres away from the villages. The discussion with respondents revealed that the transportation cost ranged from Rs. 500 to Rs. 800 per month. We assume that on an average Rs. 4,000 per year is spent on transportation at primary levels, and Rs. 6,000 per year is spent on transportation at higher levels (because these schools are farther). We further assume that families with a living income own a motorbike (see next section on transportation post check) and this provide transportation to school. Thus, for each child, an

approximate amount of Rs. 6,500 per year for 8 years of primary education, Rs. 10,400 per year for 2 years of secondary education and Rs. 12,400 per year for 2 years of higher secondary education are reportedly spent (excluding the amount spent on transportation). It was also observed that children of many respondents attend public schools in the initial years (until class 5) but move to a private school for upper primary and secondary levels. This is also because public schools in many of the villages do not have facilities beyond Class 5. In such a scenario, the amount spent on primary classes is incurred for 3 years of primary education (instead of the 8 years as mentioned above). In other words, Rs. 61,500 is estimated to be spent for educating a child in private school during 18 years of childhood, which amounts to an average annual cost of Rs. 3,617 per child, or Rs. 301 per child per month (see table 2.8.1).

In Ratlam, the median annual expense (based on the 10 schools visited) on schooling were Rs. 7,100 on primary classes, Rs. 20,600 on secondary classes, and Rs. 23,425 on senior secondary classes. We can clearly see that cost of education in Ratlam, at the senior levels, is higher than that in Chhindwara. As in the case of Chhindwara, transportation constituted a substantial part of the reported school costs. We assume that on an average Rs. 2,000 per year is spent on transportation at primary levels, and Rs. 4,000 per year is spent on transportation at higher levels in Ratlam. The transportation costs in Ratlam are lower because schools are at a closer proximity compared to Chhindwara. Note that as for Chhindwara, we assume that families with a living income own a motorbike (see next section on transportation post check) and this provides transportation to school. After deducing the transport costs, the estimated amount for educating a child in public school for until the 5th grade and in private school for the remaining 7 years (grade 6th to 12th) is Rs. 87,350, which amounts to an average annual cost of Rs. 4,853 per child, or Rs. 404 per child per month (see table 2.8.1).

The monthly expenditure incurred on education by a family comprising 2.5 children works out to be an average amount of Rs. 753 per month in Chhindwara and Rs. 1,011 per month in Ratlam. Table 2.8.1 summarizes the cost to family for children's school.

Table 2.8.1. Cost to Family for Children's School

Type of expense	Chhindwara			Ratlam		
	Primary	Middle school	Secondary	Primary	Middle school	Secondary
School fees including books, uniform (excl transport) in a private school	6,500	10,400	12,400	5,100	16,600	19,425
Number of years in each level (2)	3*	2	2	3*	2	2
Total cost x number of years in each level	19,500	20,800	24,800	15,300	33,200	38,850
Average cost per child per year (Total Cost / 18)	3,617			4,853		
Average cost for reference family per month (Average cost per child per year x number of children in reference family/12 months)	753			1,011		

* 8 years are spent in primary school, However, we assume that the first five years are spent in a government funded school, and there are no financial implications for the parents. Books and uniform are provided free of cost by the government. Since primary schools (up to grade 5) are available in the vicinity, there is no transport cost involved. Parents prefer to send their children to private school from Grade 6 onwards, because of the poor quality and often unavailability of government schools.

Source: Authors Calculations based on Primary Research.

The amounts we estimated for education are much higher than the Rs. 245 (for Chhindwara) and Rs. 264 (for Ratlam) which are included for education in our preliminary estimate of non-food and non-housing costs. This is due to our assuming that children (i) complete secondary school which they do not at present and (ii) attend private middle and secondary school. Therefore, the difference of Rs. 508 (Chhindwara) and Rs. 747 (Ratlam) per month, around \$7-10 per child, are added per month to non-food and non-housing expenses to ensure availability of adequate funds to cover educational expenses at private schools through secondary school which we consider is required for decency given the poor quality of public schools in the area.

16. TRANSPORTATION POST CHECK

In Chhindwara, the farmers and residents of the villages not only shop at the weekly markets, but also sell their produce there. The two-way transport charge to a weekly market ranges from Rs. 40 to Rs. 100. Thus, if two members of a family go to the weekly market, the monthly expense is a minimum of Rs. 320. The family also incurs transportation cost to access other facilities such as schools (since private schools are not available in the near vicinity), the healthcare centre or private medical clinics/ doctors. Given that these basic facilities are not available at close proximity (walking distance) of residential areas, owning, maintaining and running a private vehicle (a two-wheeler) is considered essential and required for decency.

In Ratlam, there were a few local shops situated in some of the villages for purchasing routine items like vegetables. Therefore, for purchase of all regular items of consumption, villagers visit the larger market situated in the centre of the Ratlam town. Like in Chhindwara, cost of owning, maintaining and running a two-wheeler is required for decent living. Those who do not own their own two-wheeler pay Rs. 20-40 per person for commuting between home and market.

In Ratlam district, 69% of the houses that the research team visited owned a motorbike and primarily used it to visit the nearby market, because of non-availability of reliable and affordable public transport. In Chhindwara district, 46% of the houses that the research team visited owned a motorbike. It is interesting that these percentages of motorbike ownership in the households we visited in the two study districts are much higher than indicated in 2011 Census (around 15%). Although it is possible that we visited a very unusual set of households, we do not believe this to be true. The difference between what we found and what is indicated by the 2011 census data could be attributed to the passage of time since 2011, the changing life-style and increasing availability of reasonably priced and fuel-efficient motorbikes.

The purchase price of a motorbike is around Rs. 50,000 (ex-showroom cost of an entry level bike). In fact, many respondents reported spending a similar amount on purchasing a second-hand motorcycle of a better variant. Moreover, farmers who did not own their own vehicle often borrowed one from a neighbour and used it by putting in petrol for the use. With the life expectancy of an entry level bike about 10 years, the straight-line depreciated annual cost of owning a motorbike is Rs. 5,000.

For Chhindwara, we estimated a monthly fuel cost of Rs. 765 for private transportation. Per litre petrol price of Rs. 109 has been used for this estimation in Chhindwara. The mileage of a 150cc motorcycle is 47 kmpl. During the field investigation, it was found that the average distance travelled per day is 11 km. Therefore, the per day cost of transport fuel has been calculated to be Rs. 25.5 and a monthly cost of Rs. 765. Adding the depreciated annual cost of owning a motorbike, the annual cost on private transportation is Rs. 14,184, or Rs. 1,182 per month. To this, we added the typical maintenance and repair costs (assuming approximately 15%) amounting to total monthly costs of Rs. 1,359. This is lower than the amount of Rs. 1,520 included for transport in our preliminary NFNH cost estimate, hence no adjustment is made as a transport post check in Chhindwara.

In Ratlam, the research team specifically enquired from the respondents, who owned motorcycles, about the expenses on fuel for using the same. On average, the respondents filled their vehicle with one litre of petrol on every alternate day, as it was the only medium to commute to the nearest market, take children to school, visit a healthcare facility, and sometimes, even to fetch water. Compared to Chhindwara, distances to these facilities were shorter; but public transportation was totally absent in the interior villages. To access public transport (a privately run unsafe, overcrowded shared vehicle – see pictures 7a-b below), they had to reach the main road which itself was quite far from the place of residence. Based on the petrol price of Rs. 107 in Ratlam and taking an average cost of Rs. 53.5 per day spent on fuel, the transportation fuel cost amounts to Rs. 1,605 per month. Adding the depreciated annual cost of owning a motorbike, the annual cost on private transportation is Rs. 24,260, or Rs. 2,022 per month. To this we add 15% for repairs and maintenance, and the total monthly costs amount to Rs. 2,325. Since this amount is lower than the amount for transport included in our preliminary NFNH estimate, no adjustment is made as a transport post check in Ratlam.

Public transport



7a. An overloaded Magic tempo (transporter) in Ratlam



7b. An overcrowded public transport facility in Chhindwara

17. PROVISION FOR UNEXPECTED EVENTS TO ENSURE SUSTAINABILITY

Villagers barely manage to subsist with the meagre income they have. As it often happens, unforeseen events like illnesses, accidents and deaths incur huge expenses, which derail workers into poverty and debt from which they find it difficult to recover. Planned and inevitable events, like marrying a daughter, create serious financial crisis in the lives of small or marginal farmers/workers. Our respondents revealed spending approximately Rs. 100,000 (in addition to existing food stocks, assets) on a wedding, and Rs. 50,000 on a death of a family member. Therefore, it is important to add a small margin (saving) above the cost of a basic quality of life when estimating a living wage or living income to allow for unexpected events. A margin of 5 percent has been added for unforeseen emergencies and discretionary spending as recommended in the Anker Methodology.

18. COST OF DECENT LIVING

Based on the above calculations, the living income for a reference size family of 4.5 persons has been estimated at Rs. 19,241 per month in Chhindwara and Rs. 20,450 per month in Ratlam, as shown below in table 2.11.1. It is important to note that this is the cost of living for a basic but decent standard of living for a typical size family in these districts of rural Madhya Pradesh.

Table 2.11.1. Estimation of Family Living Costs (Living Income) for Rural Chhindwara and Rural Ratlam

Values and Assumptions	Chhindwara		Ratlam	
	Rs.	USD	Rs.	USD
Food Cost per Person per Day for Model Diet	54.80	0.73	59.11	0.78
Food Cost per Person per Month	1,667	22	1,798	24
Food Cost for Family per Month	7,502	99	8,092	107
User-cost per Month for Acceptable Housing	2,316	31	2,316	31
Cost per Month for Utilities (Fuel, Lighting, and Water)	1,441	19	1,385	18
Housing Cost per Month	3,757	50	3,701	49
NFNH Costs	7,066	93	7,684	102
Preliminary Non-Food Non-Housing Costs	6,039	80	6,514	86
Healthcare adjustment	519	7	423	6
Education adjustment	508	7	747	10
Transportation adjustment	0	0	0	0
Sub-total Monthly Cost for Decent Living for Family	18,324	242	19,476	258
Funds for Sustainability & Emergency (5%)	916	12	974	13
Total Family Costs (Living Income)	19,241	255	20,450	271

Table 2.11.2. Key assumptions for living wage and living income estimates

Date of study	December 2021
No of Days in a Month	30.42
Non-food non-housing (NFNH) to food ratio	0.8050
Reference family size	4.5
Number of children in reference family	2.5
Number of adults in reference family	2
Exchange rate (Rs. / USD)	75.57

This report, no doubt, was focused on rural areas of Chhindwara and Ratlam districts of Madhya Pradesh. However, as mentioned in the introductory section, these districts were chosen on the basis of their broad attributes which we thought represent the general character of southern and western Madhya Pradesh respectively and therefore we believe that the estimated living incomes and living wages for these areas are also applicable to the larger southern and western rural MP respectively.

Furthermore, if we compare the living income estimated separately for Chhindwara (Rs. 19,241), which is part of southern MP and that for Ratlam (Rs. 20,450), which is part of western MP, the difference between them is around 6%. Once again, looking at the socio-economic conditions, the agroclimatic and cropping patterns, that we discussed in the introductory section of the report, we think that the living income and living wage that have been estimated for rural Chhindwara and rural Ratlam are broadly applicable to the whole of rural Madhya Pradesh, with perhaps a marginal difference of 6-8% from one area to another.

PART III. LIVING INCOMES IN CONTEXT AND LIVING INCOME LADDER

Figure 3.1 – the living income ladder – compares our living income estimates for rural Ratlam and rural Chhindwara to family incomes at the national poverty line, the World Bank poverty lines, if members earn minimum wages or prevailing wages, and average household expenditure (see Annex A for a discussion on poverty lines in India, and minimum wages and prevailing wages in Madhya Pradesh).

Our estimate of living income for rural Chhindwara is Rs. 19,241 per month, and Rs. 20,450 for rural Ratlam for a family of 4.5. This is around 2.7 times that of the family income at the Indian national poverty line (that is from 2014 and adjusted for inflation); around 2.2 times that of the World Bank poverty line for a lower-middle income country such as India; around 1.7 times that of the family income if members earned the agricultural minimum wage in MP; and around 2.3 and 2.2 times that of the family income if family members earned average prevailing wages in MP for agriculture and non-agriculture respectively. Our living income is around 8% higher than family income if family members earned the minimum wage for skilled workers in MP and 35% higher than family income if members earned the minimum wage for unskilled workers in MP.

Some of the above differences are easy to explain. For example, the national poverty line in India is for 2014 and undoubtedly would be significantly higher in 2021 in real terms because of the considerable economic development and increases in income in India since 2014. Similarly, our living income estimate is much higher than that of the World Bank poverty line, because the latter refers to mere subsistence level while our living income is adequate for a decent living. Finally, the minimum wages mandated in most of the states in India are now universally acknowledged to be far from adequate for decent living.

According to the NSS 68th Round for July 2011-June 2012 (NSSO, 2014), the average monthly per capita expenditure for rural Madhya Pradesh was Rs. 1,152.39, which equals to Rs. 5,184 per month for a family of 4.5. To make this value relevant for 2021, we increased it by (i) inflation between 2011 and 2021 (using Consumer Price Index of Agricultural Labourers)²⁷, and (ii) a further 12% to take into consideration the fact that NSSO household expenditure estimates exclude the cost or value of owner-occupied housing (as 12% is what we found in our study for the value of owner occupied housing), and (iii) real increase in per capita household expenditure in rural MP between 2011-12 and 2021 (using net state per capita domestic product growth rates at constant prices²⁸). This amounts to Rs. 12,089. Nevertheless, our living income estimate is 64% higher than our estimate of average household expenditure in 2021 in rural Madhya Pradesh.

In addition, it is worth noting that the average monthly per capita expenditure in better developed states such as Kerala, Punjab, Haryana or Maharashtra were in 2011-12 Rs. 2,669 (in rural Kerala), Rs. 2,345 (in rural Punjab), Rs. 2,176 (in rural Haryana) and Rs. 1,619 (in rural Maharashtra). Taking into account inflation since 2011-12, and making additional adjustments to account for the value of owner occupied housing and the increase in real per

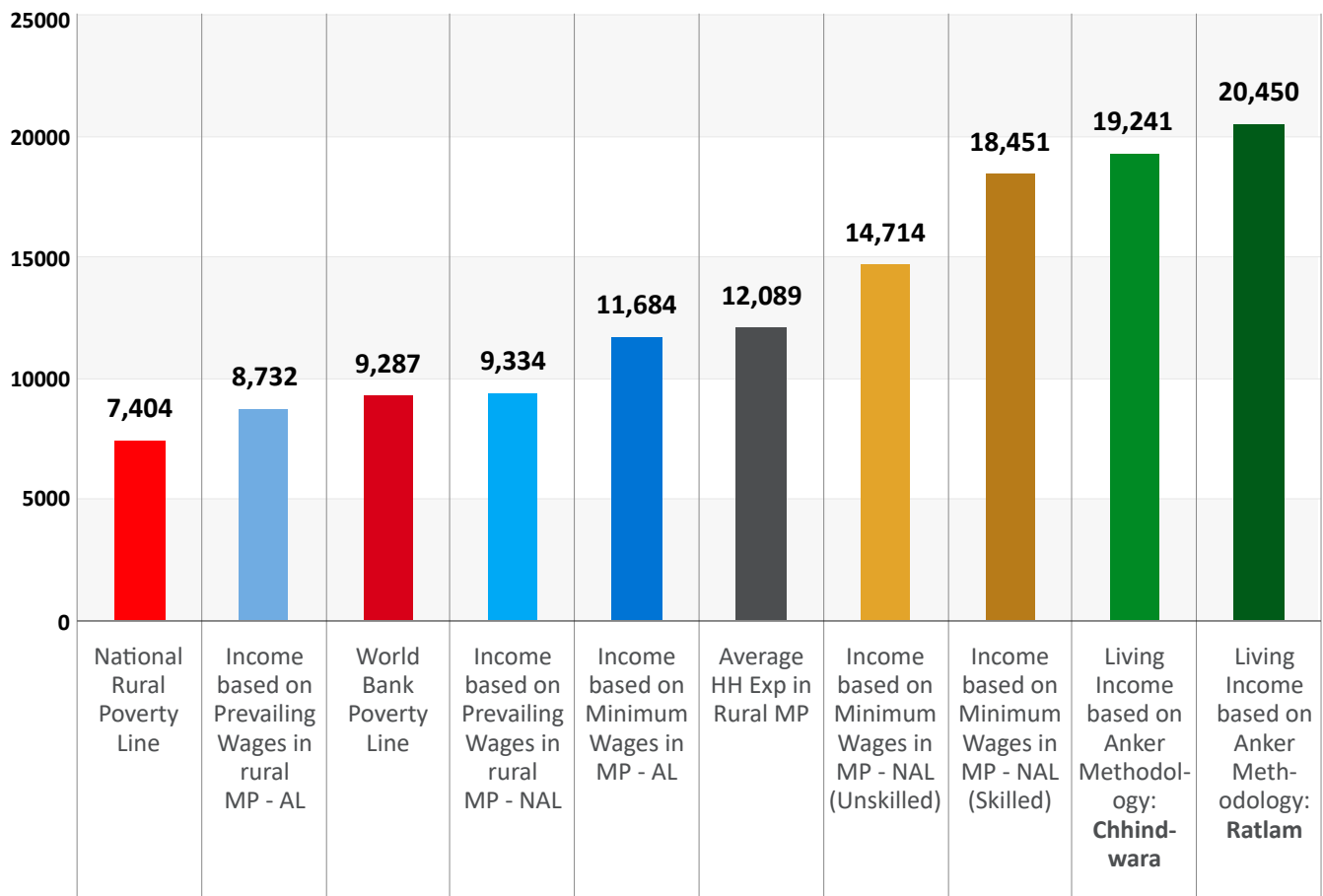
27 The annual inflation rates based on Consumer Price Index for Agricultural Labourers were 10% in 2012-13, 12% in 2013-14, 7% in 2014-15, 4% in 2015-16, 4% in 2016-17, 2% in 2017-18, 2% in 2018-19, 8% in 2019-20, and 6% in 2020-21. The compounded average annual increase in the index is around 6% over this period.

28 The compounded annual growth rates in the net state per capita domestic products between 2011-12 and 2021 are 5% for Madhya Pradesh, Kerala, Maharashtra and Haryana, and 3% for Punjab.

capita household expenditure during this period, the monthly household expenditure (for households of size 4.5) in 2021 for these relatively prosperous states amounts to Rs. 29,712 for rural Kerala, Rs. 20,806 for rural Punjab, Rs. 23,252 for rural Haryana and Rs. 18,084 for rural Maharashtra.

In other words, our living income estimate for a typical size family in rural Madhya Pradesh to maintain a basic but decent standard of living is higher than current average household expenditure of rural Maharashtra, close to that of rural Punjab, and lower than that of rural Haryana and Kerala.

Figure 3.1. Living income ladder for rural Ratlam and rural Chhindwara (in Rs. per month for a reference family)



Source: Authors Calculations. AL: Agricultural Labourers, NAL: Non-Agricultural Labourers.

As can be seen from Figure 3.1, the living income proposed for rural MP is much higher than the World Bank poverty line, national poverty lines and also incomes based on prevailing and minimum wages. Some possible reasons for these large gaps have been explained above, especially due to the time gaps and different reference points. Above all, the living income proposed here, which is based on a realistic assessment of costs of living, reflects the fact that the benefits of economic progress and social development do not always reach the interiors of the rural India and the rural poor continue to live with extremely low incomes and poor wages.

19. CONCLUSIONS

This report on Living Income and Living Wages for rural Madhya Pradesh is based on latest data available from reliable secondary sources and primary data collected through detailed field investigation. The main secondary data sources used to make living income and living wage estimates include the Census (2011), NSSO Consumption and Expenditure Survey – 68th Round: July 2011-June 2012 (NSSO, 2014), and CMIE-Consumer Pyramids Household Survey for January 2020 and August 2021 (CMIE, 2020, 2021). Primary data were collected through two rounds of field investigation; the first round was carried out in the district of Chhindwara during October 2021 and the second field investigation was conducted in the district of Ratlam during the month of December 2021.

Noticeable differences have been observed between the two districts, especially in terms of demographic composition of the population, structure of settlements, major cultivation patterns and food habits. Large part of rural Chhindwara consists of tribal population living in scattered settlements, with close proximity to and dependence on forest and non-timber forest products. On the other hand, population of Ratlam consists more of non-tribal population belonging to land-owning and other backward castes, living in clusters of settlements, mostly segregated by communities in different areas in the villages of rural Ratlam.

Although separate studies were carried out in rural areas in the two districts of Chhindwara and Ratlam, the findings and analyses are presented in this single report. This has been done to improve readability and to avoid repetition. In addition, it allows for easy comparisons and highlighting of differences. Our estimate suggests that living income for a family of 4.5 in rural Chhindwara should be Rs. 19,241 (\$255) per month, and slightly higher at Rs. 20,450 (\$271) for rural Ratlam. Similarly, the estimated living wage per month for rural Chhindwara is Rs. 12,198 (\$161) which is slightly lower than the Rs. 12,965 (\$172) for rural Ratlam²⁹.

As is clear from the report, living income for rural Madhya Pradesh refers to the total amount of income which is required by a family of 4.5 persons to lead a basic but decent life. On the other hand, living wage refers to the remuneration which a worker needs to be paid per month without having to do any overtime. In other words, the living wage will vary depending on the number of full time working members in a reference family as a single unit at a given place in a given point of time. Therefore, based on our calculation of 1.672 full time (equivalent) working members per family in the districts of Chhindwara and Ratlam, we have estimated the living wages as mentioned in the above paragraph.

The graphically presented living income ladder and living wage ladder compared the estimated living income and living wage for rural Chhindwara and rural Ratlam with other estimates such as the World Bank poverty line, national poverty lines, average household expenditure, and minimum wages and prevailing wages in Madhya Pradesh. The living income (average of the two study districts) estimated in this report for rural Madhya Pradesh is approximately 2.7 times that of the outdated 2014 national poverty line family income, and 2.2 times the World Bank international poverty line family income. Our living income is 2.3 times that of family income, assuming that family members earn prevailing wages for agricultural labourers; 2.1 times that of family income, assuming family members earn prevailing wage of non-agricultural labourers; 1.7 times of family income, assuming family

29 The living income updated by inflation to mid-2022 (June) is Rs. 20,377 (\$261) for rural Chhindwara district (MP), and Rs. 21,657 (\$277) for rural Ratlam district at an exchange rate of 78.1 Rs./\$, which was the average exchange rate for June 2022. The living wage updated by inflation to mid-2022 (June) is Rs. 12,919 (\$165) for rural Chhindwara district and Rs. 13,730 (\$176) for rural Ratlam.

members earn minimum wage for agricultural labourers; and 35% higher than family income, assuming family members earn the for non-agricultural unskilled labourers minimum wage.

It may also be noted that our living incomes for rural Chhindwara and rural Ratlam are around 64% higher than the estimated average monthly consumption expenditure of households in rural MP. At the same time, our living income estimates for rural MP are close to estimated average monthly consumption expenditure of households in rural Punjab, while being below those in rural Haryana and rural Kerala. These comparisons clearly indicate that families in rural MP are not able to afford the minimum standards of decent living. This is not surprising, because based on the Human Development Index, MP is the third poorest state in India.

Although this report focused on rural areas of Chhindwara and Ratlam districts of Madhya Pradesh, it is estimated living incomes and living wages for these areas are considered to also be applicable for the larger regions of rural southern MP and rural western MP respectively. This report clearly shows that the current incomes and wages for workers and farmers of rural Madhya Pradesh are far from adequate to lead a decent life. We hope this report will help employers and policymakers adopt suitable policies and take appropriate steps to enhance the quality of life of the farmers and workers of rural Madhya Pradesh.

ANNEX. LIVING WAGE FOR WORKERS FOR RURAL MADHYA PRADESH

This annex discusses and estimates living wages for rural Chhindwara and rural Ratlam based on family living expenses estimated for these areas in this report.

A1. NUMBER OF FULL-TIME EQUIVALENT WORKERS IN THE REFERENCE FAMILY PROVIDING SUPPORT

As living wage is a family concept, it is only appropriate to expect more than one adult in a family to provide financial support through work. It goes without saying that in the Anker living income and living wage methodology, it is unacceptable for children to work and be expected to provide support to the family. Therefore, in our living income and living wage benchmark calculations, children are assumed to be not working, which is consistent with the decency concept of a living income and living wage. In other methodologies, living wage often assumes that either both the spouses/partners work full-time or that only one spouse/partner works full-time. The assumption of one full-time worker is based on the male breadwinner model of the household that was the accepted norm till some years ago in Western countries as well as in some parts of the world today. The assumption of two full-time workers is based on the idea that all adults work full-time year-round. Neither assumption is realistic for rural Madhya Pradesh. The reality is that many adults work, and many other adults are not able to find work during many months of the year, particularly in non-peak seasons.

Number of full-time equivalent workers in our reference family is determined using the data available on (i) age and sex specific labour force participation rates (LFPR), (ii) unemployment rates (UR), and (iii) part time employment rate. The average proportion of full-time work per adult has been determined by adjusting the average adult labour force participation rate by the unemployment rate and the part-time employment rate.

The following formula is used to determine the number of full-time equivalent workers in the reference family:

$$\text{Number of full-time equivalent workers per family} = 1 + [\text{LFPR} * (1 - \text{UR}) * (1 - \text{Part-time employment rate} / 2)].$$

This formula is calculated separately for adult males and females and then an average of the two is taken. The data on LFPR and UR in rural MP for the age group 30-59 are taken from the Periodic Labour Force Survey (2019-20). Part-time employment rates of 14% for men and 38% for women are used in this process. They are drawn from the World Bank World Development Indicators (World Bank, 2022) databank which provides information on part-time employment rates (for males and females) for 136 countries. The average part-time rate for all countries for females (for the last 5 years) is 34% and for males is 21%. Since estimates for India are not reported, we based our part-time employment rates (14.1% for males and 38.0% for females) on values for other countries in the Indian sub-continent (Bangladesh, Pakistan, Nepal, and Sri Lanka).

The calculations are shown in Table A1.

Table A1. Calculation of number of full-time equivalent workers in the reference family

	LFPR (Usual Activity Rate)	Unemployment rate	Part-time rate	% of Full-time work of Spouse
Male	97.8%	0.35%	14.07%	90.6%
Female	63.1%	0.05%	37.99%	51.1%
Average				0.709
Number of Workers				1.709

The above calculations indicate 1.709 as the number of full time (equivalent) workers per family. The calculated value of 1.709 as the number of full-time equivalent workers expected to support the family in rural Ratlam and rural Chhindwara, MP is high compared to the calculated value of 1.635 for rural all-India. The main reason for this difference to all-India is the much higher female labour force participation rate for women of prime age in rural MP (63.1%) compared to all-India (45.8%). This is understandable due to the much higher tribal population in rural MP. At the same time, we feel that 1.709 for rural MP is itself an overestimate for several reasons.³⁰ Therefore, it was thought reasonable to reduce it to 1.672 (i.e., the average of the MP and the all-India estimate).

Given 1.672 workers per family, the net monthly living wage for rural Chhindwara is Rs. 11,508 (\$152) and Rs. 12,231 (\$162) for rural Ratlam.

A2. MANDATORY PAYROLL DEDUCTIONS AND INCOME TAX AND CALCULATION OF GROSS LIVING WAGE (AKA LIVING WAGE)

To estimate a living wage, it is necessary to add possible income tax and mandatory payroll deductions to the net living wage to ensure that workers have sufficient take home pay to be able to afford a decent standard of living for their family (see figure 1.4 above).

Under the Indian Income Tax Act, every person responsible for paying any income, which is chargeable under the head 'salary', is expected to deduct income tax (TDS) on the estimated income of the person. The deduction is to be made at the time of the actual payment. However, no tax is deducted unless the estimated salary income exceeds the maximum amount not chargeable to tax applicable in case of an individual during the relevant financial year. The income tax slabs in India for the assessment year 2020-21 indicates an exemption limit of

30 There are two reasons why we feel that the estimated number of full-time equivalent workers per family for rural MP and rural India is overestimated. First, we estimated LFPRs for persons 30-59 and not for the usual 25-59 age group as data were not available for ages 25-29. Second and much more importantly, it is likely that India's reported LFPRs include many more part-time workers than found in other countries, because India uses the "usual activity status" definition of labour force participation rather than the "current activity status" definition which is used by almost all other countries in the world. Usual activity status includes more labour force activity and more part-time employment than are included in the labour force statistics of other countries. For example, the part-time employment rate in most countries is usually defined as persons working for less than a stipulated number of hours in the previous week. This means that other countries generally do not consider the important aspect of part-time employment related to only working in some seasons which is important when the usual labour force definition is used. Thus, we feel that an additional adjustment needs to be made to the number of full-time equivalent workers expected to support the family.

Rs. 250,000 for individuals less than 60 years of age, Rs. 300,000 for individuals between 60-80 years of age, and Rs. 500,000 for individuals of 80 years age and above. Our living wage estimates suggest that workers earning a living wage are exempted from paying income tax.

There is a statutory payroll deduction for the Provident Fund, i.e., the contributions made by the employee during the time he/she worked along with an equal contribution by his/her employer. This is calculated at 12% of his/her basic salary with the same amount contributed by the employer. However, employees have the option to contribute more than 12%.

Thus, while no income tax is due on our estimated living wage, statutory payroll deduction for provident fund for employees is required. Although there is no legislative norm in India on the actual proportion of pay and allowances that are subject to the 12% provident fund deduction, some court judgements³¹ and general practice suggest that allowances do not generally exceed 50% of the total pay. In addition, the provident fund deduction is assessed on the basic wage and dearness allowance components of the total salary. Given this background, we decided to consider that 6% of the net living wage is added as employees' contribution to the Provident Fund. Adding this amount to our net living wage estimates, we get the gross living wage estimates of Rs. 12,198 (\$161) for Chhindwara and Rs. 12,965 (\$172) in Ratlam³².

A3. LABOUR LAWS IN INDIA

Until recently, labour and employment related issues in India had been governed by a wide range of (as many as 44) legislations. This plethora of legislation were broadly grouped into broad categories of (i) working conditions, (ii) industrial relations, (iii) wages, (iv) welfare and (v) social securities. After many years of back-and-forth deliberations and several rounds of discussions at various levels, this multiplicity of legislations has been replaced by four major labour codes, namely (i) the Code on Wages, 2019, (ii) the Industrial Relations Code, 2020, (iii) the Occupational Health, Safety and Working Conditions Code, 2020, and (iv) the Code on Social Security, 2020.³³

As matters of 'labour and employment' fall under the concurrent list in the constitution of India, both the central government and the state governments are required to notify the rules of the four labour codes to enforce these laws in respective areas of their jurisdiction. While the power to make the rules has been vested with the Central Government, the appropriate state governments are required to publish the rules in their official Gazette. Many state governments, including that of Madhya Pradesh, have published these rules under the new Labour Codes.

The Code on Wage replaced the earlier four central labour legislations, namely the Payment of Wages Act, 1936, the Minimum Wages Act, 1948, the Payment of Bonus Act, 1965 and the Equal Remuneration Act, 1976. According to the new definition of wage under the Code on Wage, wage includes all remuneration paid by way of salaries, allowances or otherwise, including basic pay and dearness allowance. However, it excludes (a) any bonus payable under any law in force; (b) value of house-accommodation/house rent allowance or the supply of light, water,

31 See, <https://www.argus-p.com/updates/updates/sc-on-which-allowances-to-form-part-of-the-basic-wages-for-the-purpose-of-epf-contribution/>

32 The gross living wage updated by inflation to mid-2022 (June) is Rs. 12,919 (\$165) for rural Chhindwara district and 13,730 (\$176) for rural Ratlam at an exchange rate of 78.1 Rs./\$, which was the average exchange rate for June 2022.

33 See: <https://labour.gov.in/labour-codes>

medical attendance or other amenity; (c) contribution paid by the employer to any pension or provident fund, and the interest which may have accrued thereon; (d) any conveyance allowance or the value of any travelling concession; (e) any sum paid to the employed person to defray special expenses entailed on him by the nature of his employment; (f) remuneration payable under any award or settlement between the parties or order of a court or tribunal; (g) any overtime allowance; (h) any commission payable to the employee; (i) any gratuity payable on the termination of employment; and (j) any retrenchment compensation or other retirement benefit payable to the employee or any ex gratia payment made to him on the termination of employment.

A4. LIVING WAGE COMPARISONS AND WAGE LADDER

A4.1. Minimum wages in Madhya Pradesh

The new wage code mandates that employers pay workers not less than the stipulated minimum wage. Further, minimum wages must be revised and reviewed by the central and state government at an interval of not more than five years. Minimum wage and salary structure vary depending on the state, area within the state based on development level (zone), industry, occupation, and skill-level. In other words, the prescribed quantum of minimum wage depends on the skill-level of the worker and the nature of work. Broadly, workers in India are categorized as unskilled, semi-skilled, skilled, and highly skilled. Each state in India prescribes from time to time the minimum wages, including dearness allowance, for different occupational categories and skill levels.

The state of Madhya Pradesh has prescribed Rs. 6,988 as the minimum monthly wage for agricultural labour with effect from 1st April 2021. At the same time, the minimum wages prescribed for non-agricultural workers in the categories of unskilled, semi-skilled, skilled and highly skilled are Rs. 8,800, Rs. 9,657, Rs. 11,035 and Rs. 12,335 respectively³⁴.

A4.2. Prevailing wages in rural Madhya Pradesh

Most farms in rural Madhya Pradesh are small or marginal in terms of land holding size, and many households are landless. During our field investigation carried out in the sample 40 villages in the districts of Chhindwara and Ratlam, two things were made amply clear by the respondents. One, the average size of land owned by the farmers is often too small to support a family of 4-5 members. In Ratlam, out of the 100 respondents, 95 owned land, and the average size was 6.83 bighas or 0.76 hectares. In Chhindwara, out of the 68 respondents, 60 owned land. Out of these, 45 respondents owned less than 2 hectares of land, 11 owned between 2 to 3 hectares of land, and only 4 owned land in excess of 4 hectares. Secondly, barring a few, farming was largely rain-fed, limiting cultivation and use of land to only one season, leaving the land barren for the rest of the year. Migration to other parts of the state and to other neighbouring states such as Gujarat and Maharashtra for work was a common practice among villagers of the two study districts of Chhindwara and Ratlam. Families with more than one working member encouraged one or more members to seek daily wage at least during off season, if not round the year. It is a common sight to see groups of (mostly) men and women in large numbers gathered together in several areas of the town every morning waiting for someone to pick them up for daily labour. Mostly, they are picked up for unskilled jobs to work either for relatively large farmers or for other jobs such as construction work or catering etc.

34 See, <https://paycheck.in/>

According to a Reserve Bank of India (RBI, 2021), Madhya Pradesh has one of the lowest average daily wage rates for rural male non-agricultural labour at Rs. 232.60, compared to Rs. 677.60 in Kerala, Rs. 449.5 in Tamil Nadu and Rs. 344.2 in Punjab. For rural male agricultural labour, the average daily wages are Rs. 217.6 in Madhya Pradesh compared to Rs. 706.5 in Kerala and Rs. 357 in Punjab. There is clear variation both in availability of work and the daily wage rate depending on the season. The average daily wage in rural MP reported in November 2021 was Rs. 217.6 for male agricultural labourers and Rs. 232.6 for male unskilled non-agricultural labourers. Assuming a worker works 24 days in a month, this equals Rs. 5,222 per month for agricultural labourers and Rs. 5,582 per month for unskilled non-agricultural labourers.

A4.3. World Bank Poverty Line and Poverty Line Wage

The international poverty lines used by World Bank for developing countries are set at \$1.90, \$3.20, and \$5.50 per person per day, in 2011 internationally comparable PPP (purchasing power parity) dollars for low-income, lower-middle income, and upper-middle income countries respectively. India falls in the lower middle-income category as per the classification of World Bank, and hence, we use the poverty line of \$3.20 per person per day. This amounts to 97 PPP per person per month and 438 PPP per month for a family of 4.5. Using a conversion rate of Rs. 21.20 per international dollar (2020 PPP)³⁵, the World Bank line for India for a family of 4.5 persons per month amounts to Rs. 9,287. Dividing this by 1.672 (i.e., the number of workers) gives us the World Bank Poverty Line wage as Rs. 5,554.

A4.4. National Poverty Line and Poverty Line Wage

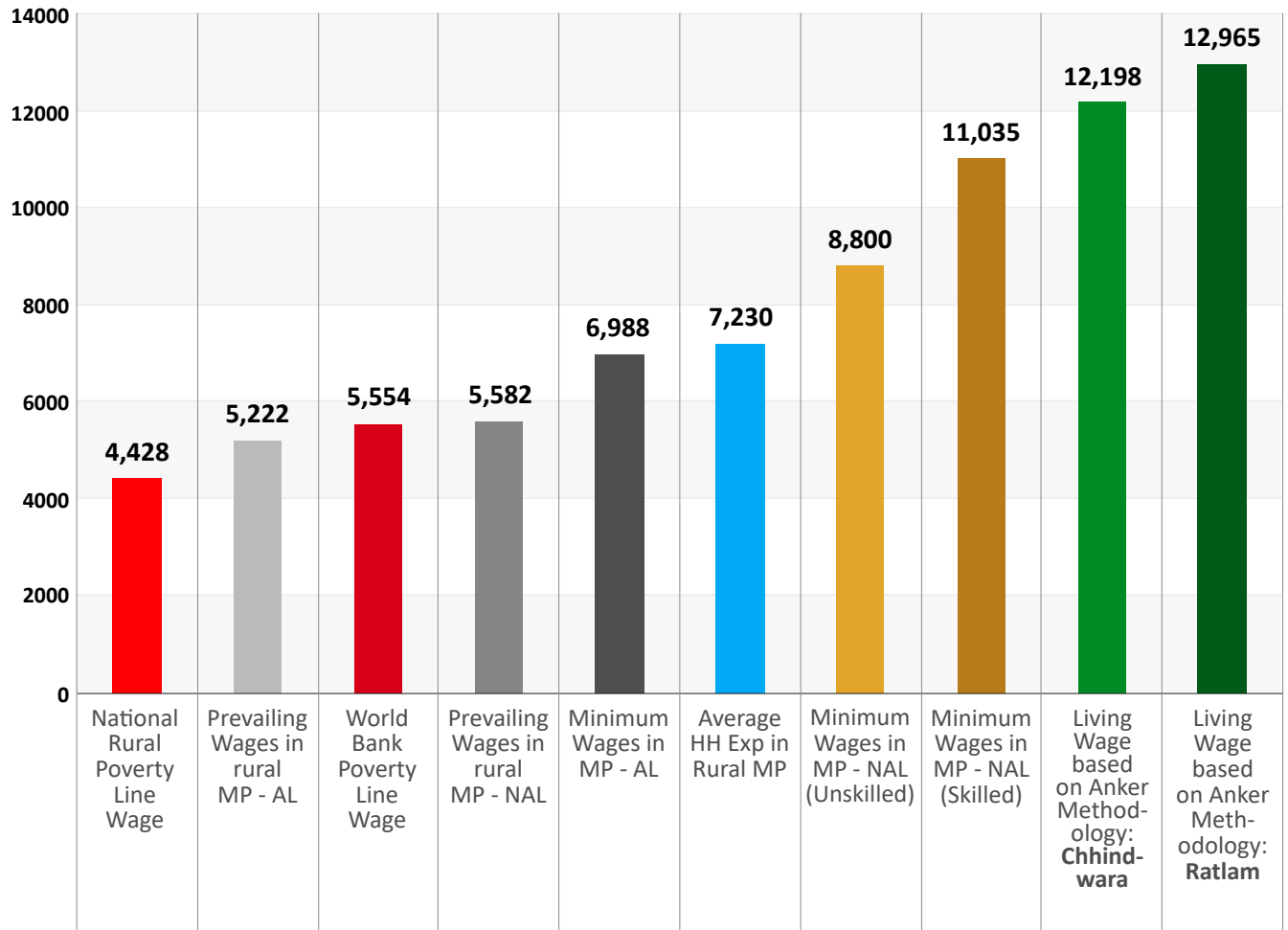
Although an officially accepted national poverty line is not available for India, and official poverty estimates made by Niti Aayog³⁶ follow a multidimensional approach, the Rangarajan committee (Government of India, 2014) estimated monthly per capita expenditure of Rs. 972 per month and Rs. 1,407 per month, in rural and urban areas respectively, as the poverty threshold. This threshold is higher than the previously used Tendulkar's poverty line in India set at Rs. 816 monthly per capita expenditure in rural areas and Rs. 1,000 in urban areas (Government of India, 2009). These poverty line thresholds are at 2011-12 prices and for all-India. Using the inflation rates based on Consumer Price Indices for Agricultural Labourers, the national rural poverty lines per person per month for 2020-21 are Rs. 1,381.2 as per Tendulkar's methodology and Rs. 1,645.3 using the Rangarajan's methodology, amounting to Rs. 6,215.4 and Rs. 7,403.6 respectively for a family of 4.5. If we divide these by 1.672 (i.e., the number of workers), we get the National Poverty Line wage ranging between 3,717 and 4,428.

A4.5. Wage ladder

The wage ladder below illustrates how our living wages for rural Ratlam and rural Chhindwara compare to other wages benchmarks which were discussed in the above sections. Our living wage is 2.8 times that of the national poverty line wage, and 2.3 times that of the international poverty line wage. It is more than double that of the prevailing wages for agricultural and non-agricultural labourers, 1.8 times that of the minimum wages for agricultural labourers and 43% higher than the minimum wages for non-agricultural unskilled labourers.

35 Note that the PPP for 2021 for India is likely to be slightly higher than it was for 2020. Using a formula on how to update PPP to subsequent years suggested by the World Bank (which uses the ratio of inflation rate in 2021 for India relative to the United States), we estimate that PPP for 2021 might be around 2% higher than in 2020 at possibly around 21.37.

36 The Niti Aayog is the apex public policy think tank of the Government of India. This body has replaced the erstwhile Planning Commission of India.

Figure A4.1. Wage ladder for rural Chhindwara and rural Ratlam (in Rs. per month per worker)

Source: Authors Calculations. AL: Agricultural Labourers, NAL: Non Agricultural Labourers.

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