

# A Socioeconomic Analysis of National Road Improvements in Indonesia:

## A Case Study of the 2015 EINRIP Road Improvement in Dompu and Sumbawa



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**SMERU RESEARCH REPORT**

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Improvements in Indonesia: A Case Study of the 2015  
EINRIP Road Improvement in Dompu and Sumbawa**

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A significant part of the research in this publication uses interviews and focus group discussions. All relevant information is recorded and stored at the SMERU office.

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Cover photo: Graham R. Gleave (DFAT M&E Specialist) & Yudi Fajar M. Wahyu (The SMERU Research Institute)

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Finally, we like to express our gratitude to Statistics Indonesia, our respondents in the transportation business (*ojek* and bus drivers and bus owners) in the eatery business, as well as corn dryer owners and warehouse owners, who have welcomed us and provided valuable information.

# ABSTRACT

## A Socioeconomic Analysis of National Road Improvements in Indonesia: A Case Study of the 2015 EINRIP Road Improvement in Dompu and Sumbawa

Yudi Fajar M. Wahyu, Bambang Sulaksono, and Widjajanti Isdijoso

This report describes the result of the qualitative socioeconomic monitoring conducted by The SMERU Research Institute toward the EINRIP road improvement in Kabupaten Sumbawa and Kabupaten Dompu in the Province of West Nusa Tenggara. The objective of the road improvement was to support socioeconomic development in the eastern Indonesian region through improvement of a national road network that can meet standards of quality and accessibility, thus enabling the development of local and regional economies.

The study uses a qualitative approach. Semi structured in-depth interviews were conducted with government officials at the *kabupaten* (district), *kecamatan* (subdistrict), and village levels; as well as with business actors and community household members. Focus group discussions were also conducted.

Monitoring results show that the economy of Sumbawa and Dompu has grown and the people's wellbeing has improved. This is reflected by the increase in their human development index and decrease in their poverty rate, as well as the decrease in the absolute number of people who live below the poverty line. However, in general the level of impact of the road improvement on each area is different, depending on whether there were strategic steps taken by the regional government, private sector, and the community to improve the livelihood condition of the people.

Keywords: Eastern Indonesia, impact, road improvement, social economic, West Nusa Tenggara.

# TABLE OF CONTENTS

ACKNOWLEDGEMENTS	i
LIST OF TABLES	iv
LIST OF FIGURES	iv
LIST OF ABBREVIATIONS	vi
EXECUTIVE SUMMARY	viii
I. INTRODUCTION	1
1.1 Overview of Social Research	1
1.2 Methodology	1
1.3 Schedule and Research Team	4
II. KABUPATEN DOMPU	5
2.1 General Description of the Area	5
2.2 The Economy and Land Use	6
2.3 Livelihood and Welfare	10
2.4 Transport Sector and Services	19
2.5 Health and Health Services	24
2.6 Education	26
III. KABUPATEN SUMBAWA	29
3.1 General Description of the area	29
3.2 The Economy and Land Use	30
3.3 Livelihoods and Welfare	34
3.4 Transport Sector and Services	40
3.5 Health and health services	46
3.6 Education	47
IV. CONCLUSIONS	50
4.1 Transport Sector	50
4.2 Local economy and Land-Use Development	51
4.3 Livelihood and Social Life	51
4.4 Health and Health Services	51
4.5 Education	52
4.6 Road accidents	52
4.7 Theft	52
4.8 Unintended Environmental Degradation	52
LIST OF REFERENCES	53

## LIST OF TABLES

Table 1. EINRIP Roads that Serve as Research Sites	1
Table 2. The Population of Desa Nanga Tumpu	6
Table 3. GRDP of Kabupaten Dompu, 2010–2014	6
Table 4. GRDP Growth Based on 2010 Constant Price: Five Largest Sectors *	7
Table 5. Production of Corn and Rice in Kabupaten Dompu	8
Table 6. The Numbers of Livestock in Kabupaten Dompu	9
Table 7. Estimation of Kabupaten Dompu’s HDI	10
Table 8. Poverty Rate of Kabupaten Dompu	11
Table 9. Gini Ratio for Kabupaten Dompu District 2008-2011	11
Table 10. Welfare Group Characteristics – Perceptions of Women’s FGD	15
Table 11. Household Classification in Desa Nanga Tumpu (Women’s FGD)	17
Table 12. Net Enrollment Rate (NER) of Kabupaten Dompu in 2008, 2010 & 2014	27
Table 13. Population of Desa Maronge	30
Table 14. GRDP of Kabupaten Sumbawa, 2010-2014	31
Table 15. GRDP Growth Based on 2010 Constant Price, for the 5 Largest Sectors, Kabupaten Sumbawa.*	31
Table 16. Corn and Rice Production in Kabupaten Sumbawa	32
Table 17. Numbers of Livestock in Kabupaten Sumbawa (2010-2014)	32
Table 18. Kabupaten Sumbawa’s HDI (2010–2013)	34
Table 19. Poverty Rate for Kabupaten Sumbawa	35
Table 20. Gini Ratio for Sumbawa District 2010–2014	35
Table 21. Welfare Group Distribution	38
Table 22. Condition and Length of Roads in Kabupaten Sumbawa 2011 & 2014	41
Table 23. Total Goods Leaving Badas Port 2010-2014	42
Table 24. Number of Schools in Kabupaten Sumbawa during 2010–2014	47
Table 25. Net Enrollment Rate (NER) of Sumbawa District in 2010 and 2014	48

## LIST OF FIGURES

Figure 1. Location of Project Road and Sample Villages in Kabupaten Dompu & Kabupaten Sumbawa	3
Figure 2. Total Expenditure per Capita per Month Kabupaten Dompu 2011-2014	12
Figure 3. A vendor cycling through Desa Nanga Tumpu	14
Figure 4. A women’s FGD in Desa Nanga Tumpu	18



Figure 5. A junior high school student in Kabupatenupaten Dompu riding a motorcycle without a helmet	23
Figure 6. Total Expenditure per Capita per Month Kabupaten Sumbawa 2011–2014	36
Figure 7. A women’s FGD in Desa Maronge	39
Figure 8. Male and female students of a junior high school in Kabupaten Sumbawa ride their motorcylces with two passengers and no helmet	45

## LIST OF ABBREVIATIONS

APBD	<i>anggaran pendapatan dan belanja daerah</i>	local budget
ARD		acute respiratory disease
Bappeda	<i>Badan Perencanaan Pembangunan Daerah</i>	Regional Development Planning Agency
BOS	<i>Bantuan Operasional Sekolah</i>	School Operational Assistance
BPJS Kesehatan	<i>Badan Penyelenggara Jaminan Sosial Kesehatan</i>	Healthcare and Social Security Implementation Agency
BPS	<i>Badan Pusat Statistik</i>	Statistics Indonesia
BSK	<i>Bank Surya Kencana</i>	Private Bank located in Kecamatan Plampang, Kabupaten Sumbawa
BUMDes	<i>Badan Usaha Milik Desa</i>	Village-owned Enterprise
DGH	Bina Marga	Directorate General of Highways, Ministry of Public Works and People's Housing
DPRD	<i>Dewan Perwakilan Rakyat Daerah</i>	Regional House of Representatives
EINRIP		Eastern Indonesia National Road Improvement Project
FGD		focus group discussion
GRDP		Gross Regional Domestic Product
ha		hectare
HDI		Human Development Index
HKm	<i>Hutan Kemasyarakatan</i>	Community Forestry
ISPA	infeksi saluran pernapasan akut	upper respiratory tract infection
JAKKAD	Jaminan Kesehatan Masyarakat Kabupaten Dompu	Dompu Public Health Insurance Scheme
Jamkesmas	<i>Jaminan Kesehatan Masyarakat</i>	Public Health Insurance for the Poor
Jamkesda	<i>Jaminan Kesehatan Daerah</i>	Regional Health Insurance
MI	<i>Madrasah Ibtidaiyah</i>	Islamic primary school
MTs	<i>Madrasah Tsanawiyah</i>	Islamic junior high school
NER		net enrollment rate
PAUD	Pendidikan Anak Usia Dini	Early Childhood Education Program
P1		Poverty Gap Index
P2		Poverty Severity Index
PDAM	<i>Perusahaan Daerah Air Minum</i>	Local Water Supply Company

perda	<i>peraturan daerah</i>	regional government regulation
PIDRA		<i>Participatory Integrated Development in the Rain-fed Area</i>
PIJAR	<i>Sapi, Jagung, dan Rumput Laut</i>	The Governor of West Nusa Tenggara's program to increase the production of the three main commodities, i.e., cattle, corn, and seaweed
PLN	<i>Perusahaan Listrik Negara</i>	State-Owned Electricity Company
PSP PNPM	<i>Program Simpan Pinjam Program Nasional Pemberdayaan Masyarakat Perempuan</i>	Women's Savings and Loans Program of the National Program for Community Empowerment
polindes	<i>pondok bersalin desa</i>	village maternity center
PMT	<i>pemberian makanan tambahan</i>	supplementary food program
PSP	<i>Program Simpan Pinjam</i>	Savings and Loan Program
puskesmas	<i>pusat kesehatan masyarakat</i>	community health center
pustu	<i>puskesmas Pembantu</i>	secondary <i>puskesmas</i> /community health center
Raskin	<i>Beras untuk Rumah Tangga Miskin</i>	Rice for Poor Households
RDKK	<i>Rencana Definitif Kebutuhan Kelompok Petani</i>	Definitive Planning for Farmer's Group Needs
SD	<i>sekolah dasar</i>	primary school
SIM C	<i>Surat Izin Mengemudi untuk Pengendara Sepeda Motor</i>	Driver's Licence for two-wheeled vehicles
SKAU Kayu	<i>Surat Keterangan Asal Usul Kayu</i>	Certificate of Wood Origin
SMA	<i>sekolah menengah atas</i>	senior high school
SMK	<i>sekolah menengah kejuruan</i>	vocational high school
SMP	<i>sekolah menengah pertama</i>	junior high school
SNVT	Satuan Non-Vertikal Tertentu	Provincial Specific Non-vertical Work Unit
Susenas	<i>Survei Sosial-Ekonomi Nasional</i>	National Socioeconomic Survey
SUTA	<i>Sistem Usaha Pertanian</i>	Farming Venture System
UEP	<i>Usaha Ekonomi Produktif</i>	Productive Economic Activities
UKS	<i>Usaha Kesehatan Sekolah</i>	School Health Initiative
ZoSS	<i>Zona Selamat Sekolah</i>	School Safety Zone

# EXECUTIVE SUMMARY

## Overview of Social Research

There are three EINRIP projects in Sumbawa, covering 82 km of road between Sumbawa Besar and Banggo (see map overleaf). This work has been complemented by a further 82 km of road improvement carried out by the Directorate General of Highways (DGH) with APBN (national budget) funding. As a consequence, the whole road from Sumbawa Besar to Banggo is now at least 6 m wide and, as seen during the surveys, in generally good condition. Full Baseline and Monitoring Surveys were held on ENB 03 in 2008 and 2013 respectively, while both ENB 01 and ENB 03 were subject to a Construction Impact study in 2011.

The 2013 Monitoring study of ENB 03 found that the road improvements had reduced journey times and facilitated access to schools, medical services and markets. In addition, the improved accessibility of the previously remote areas was seen as having facilitated the provision of government support for economic development.

The research was intended to follow-up on the earlier studies to establish if the benefits identified in 2013 had been sustained and whether similar benefits had been realized by the communities living alongside ENB 01AB, the Sumbawa Bypass and ENB 01C: Lape – Plampang. Specifically, the SMERU team set out to:

- Review and document current socioeconomic conditions; and
- Identify any changes in socioeconomic conditions since the earlier surveys and the reasons for those changes

As in previous years, the research comprised structured, in-depth, interviews with local officials and residents, and focus group discussions (FGD), which were held in the villages of Nanga Tumpu, which lies between the two sections of ENB 03, and Maronge, which is approximately half-way along ENB 01C.

## Transport Sector

The savings in travel times identified in the 2013 surveys have been sustained, while the 2015 traffic surveys show that a greater proportion of traffic now runs at night. Interview data suggests that road users feel safer driving at night, now that the danger of hitting a pothole has been removed.

The survey in 2013 indicated that reductions in travel time had increased the effective capacity in the transport sector, with a consequent increase in competition in the sector. The interview data this year suggest that the excess capacity has been taken up, but that competition remains lively. Investment in vehicles for hire appears to be a common use of surplus funds generated in the agricultural sector. Long distance bus services passenger volumes, which were reported to have dropped due to the increasing use of motorcycles, are now reported to have recovered, but the fares are still lower than permitted maxima,

The previously reported development of mobile vending activities continues. Volumes of trade have reached the stage where some vendors are investing in pick-up trucks. It was also reported that *warung* (roadside stalls) owners no longer travel into town to pick up their supplies from

wholesalers: instead, they use hand-phones to make their orders and the wholesaler delivers the goods to them.

Banking services are also provided by mobile agents. They travel the road by motorcycle and are able to make small loans and to accept deposits.

## Living Standards and Economic Activities

Living standards in both Dompu and Sumbawa have increased since the previous surveys. However, officials in both areas report an increase in income inequality and a trend towards increasing concentration of land ownership.

In the Dompu area, the increase in incomes was attributable mainly to the success of the hybrid corn component of the PIJAR program. The extent of corn cultivation now substantially exceeds the original expectations; new land is being brought into cultivation and corn plantings are starting to encroach on forest land. The corn is stripped and dried in local factories and then transported by road to Sumbawa and taken by sea to Surabaya. The principal processing plant has expanded dramatically over the last two years, and there is reported to be a general shortage of storage space for the crop.

Corn is not cultivated in any significant quantity in the Sumbawa area, where the main crop is rice, with a secondary crop of onions. Local farmers produce rice and then rent land for the onion crop, which is raised by seasonal migrant workers from Bima. However, the main source of increased income in the Sumbawa area is reported to be remittances from migrant workers overseas.

## Health Care

Health care provision has improved in both areas over the last five years, partly as a result of the road improvements. It is now both easier for the health authorities to recruit staff to work in formerly less accessible areas and for that staff to travel out from the health centres to the villages. The ambulance service remains rudimentary, but the road improvements have meant that transporting patients is both faster and safer than before.

## Education

In both areas, the road improvements have made it easier for children to get to school. The principals report that students are now more punctual, due in part to the extensive (and illegal) use of motorcycles. In the Dompu region, respondents report that the improved access has meant that students can travel to better schools further from home. This does not appear to be the case in Sumbawa because a school and university is available within the village.

## Road Safety

Road accidents are not yet seen as a serious problem, though some respondents expressed concern about the speed of vehicles using the roads and two pedestrians were reported to have been killed in separate accidents on the bend through Maronge village in 2014.

As noted above, the use of motorcycles by underage junior and high school students is very common, most failing to use helmets. Boys and girls appear to be equally represented among motorcycle users, though the girls self-report as being more cautious drivers. Although *puskesmas* (community health center) representatives now visit schools to provide advice on sexual health and narcotics, the police (unlike South Kalimantan) do not yet provide any kind of road safety instruction to school children.

The provision of sidewalks along the road and safety zones near schools was generally appreciated by school principals and by members of the public. However, it is clear that drivers do not slow down in the school zones and enquiries with school children and in the FGD showed that the public is generally ignorant of the meaning of road signs, including speed limits.

## Land-use Developments

There has been extensive new building along the Sumbawa bypass. In addition to residential areas, major institutions such as the DPRD (Regional House of Representatives), the provincial hospital and the university have relocated to the bypass. A number of private firms have also moved into the area.

There is less evidence of new construction in the Dompu area, but population in Nanga Tumpu has been growing, due mainly to in-migration and a new *dusun* (hamlet) has been created in response to the increase in families taking advantage of the opportunities for corn production.

## Social Impacts

During the 2013 research women reported that they felt safer using motorcycles after the road improvement and this had facilitated social contacts. They also reported that the increasing numbers of itinerant vendors had reduced the time they had to spend on marketing and on housework. This year's research confirmed that both these impacts have continued and have become the new normal, in that they no longer attracted comment.

As in previous years, thefts of cattle occur from time to time and road improvements are believed to make it easier for the thieves to escape. There is also a reported increase in the number of motorcycle thefts, though this may reflect the increase in the size of the motorcycle fleet in the area.

## Conclusions

The social research carried out this year has reinforced the conclusion drawn in the 2013 Sumbawa monitoring survey that road improvements which increase accessibility significantly are effective in facilitating economic development and the provision of social services. No new negative outcomes have been uncovered and the transport operators and roadside vendors whose businesses were adversely affected by the increased competition that followed road improvements have managed to adjust to the new situation.

# I. INTRODUCTION

## 1.1 Overview of Social Research

There have been three EINRIP road improvement projects in Sumbawa, covering 82 km of road between Sumbawa Besar and Banggo (see Figure 1). This work has been complemented by a further 82 km of road improvement works carried out by the Directorate General of Highways (DGH) with APBN (national budget) funding. As a consequence, the whole length of road from Sumbawa Besar to Banggo is now at least 6 m wide and, as seen during the surveys, is in generally good condition. Full baseline and monitoring surveys were held on ENB 03 in 2008 and 2013 respectively, while both ENB 01 and ENB 03 were subject to a construction impact study in 2011.

The 2013 monitoring study of ENB 03 found that the road improvements had reduced journey times and facilitated access to schools, medical services, and markets. In addition, the improved accessibility of previously remote areas was seen as having facilitated the provision of Government support for economic development.

This social research was intended to follow-up on the earlier studies to establish if the benefits identified in 2013 had been sustained and whether similar benefits had been realized by the communities living alongside ENB 01AB, the Sumbawa Bypass, and ENB 01C: Lape – Plampang. Specifically, the SMERU team set out to:

- Review and document current socioeconomic conditions; and
- Identify any changes in socioeconomic conditions since the earlier surveys and the reasons for those changes

## 1.2 Methodology

### 1.2.1 Survey Locations

As in previous years, the social research comprised semi-structured in-depth interviews with local officials and residents, and focus group discussions (FGDs), which were held in the villages of Nanga Tumpu (Kabupaten Dompu), which lies between the two sections of ENB 03; and Maronge (Kabupaten Sumbawa), which is approximately half-way along ENB 01C.

**Table 1. EINRIP Roads that Serve as Research Sites**

Package	Link No	From	To	Kabupaten	Length (km)	Start km	End km
ENB-01AB	42.085	Sumbawa Besar Bypass	Km 70 (Sec 1)	Sumbawa Besar	8.9	0.0	8.9
	42.030-1	Pal IV			2.3	4.7	7.0
ENB-01C	42.030.1	Pal IV (Sec. 2)	Km 70	Sumbawa	31.8	27.7	59.5
ENB-03	42.030.3	Cabdin. Dompu (Segment. A)	Banggo	Dompu	9.5	124.5	115.0
	42.030.3	Cabdin. Dompu (Segment B)	Banggo		15.0	101.0	86.0

Desa Nanga Tumpu was selected because it lies between Segments A and B of ENB-03. The road running through the village was improved using APBN funds, so the villagers are aware of the differences in construction practices between EINRIP and APBN.

In Kabupaten Sumbawa, Desa Maronge was selected as the sample village in the 2011 survey and surveyed again in 2015. The primary reason for this selection is that the village is located in the middle of ENB-01C. The people of Desa Maronge can choose between two markets: to the west is Langam market (Kecamatan Lopok); and to the east is Pasar Plampang (Kecamatan Plampang). To get to these markets, they cross the boundary of the EINRIP road and use the national road funded by APBN.

The national road that passes through Kabupaten Sumbawa and Kabupaten Dompu was subject to road improvement works, connecting the EINRIP and APBN-funded roads. The improved national road was already around 3 years old at the time of the 2015 study, and was in a good and smooth condition. This created a challenge for this study since the community had already forgotten or no longer significantly differentiate these two segments of the road. The community instead consider it as a single road.

Thus, it is important to note that there is a complication in attributing the impact of EINRIP-funded road improvement works because: (i) respondents in Desa Kwangko and Desa Nanga Tumpu in Kabupaten Dompu pass through both EINRIP and APBN-funded roads for traveling to Puskesmas Soriutu or to the capital of Kecamatan Manggelewa, and (ii) respondents from the business and transport sectors (bus drivers, bus passengers, bus owners) usually refer to the impact of road improvements as a whole – the EINRIP and APBN-funded road segment, except if the questions explicitly mentioned the EINRIP-funded road.

### 1.2.2 Focus Group Discussion

In the previous study, two types of FGD were conducted, separated by gender. Due to budget constraints, in 2015, FGDs were conducted only with women.<sup>1</sup> In addition, the researchers also collect information through a group interview with village apparatuses.

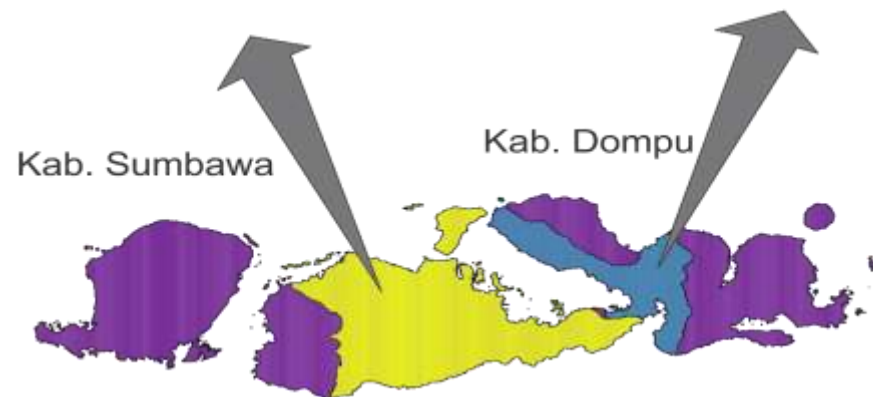
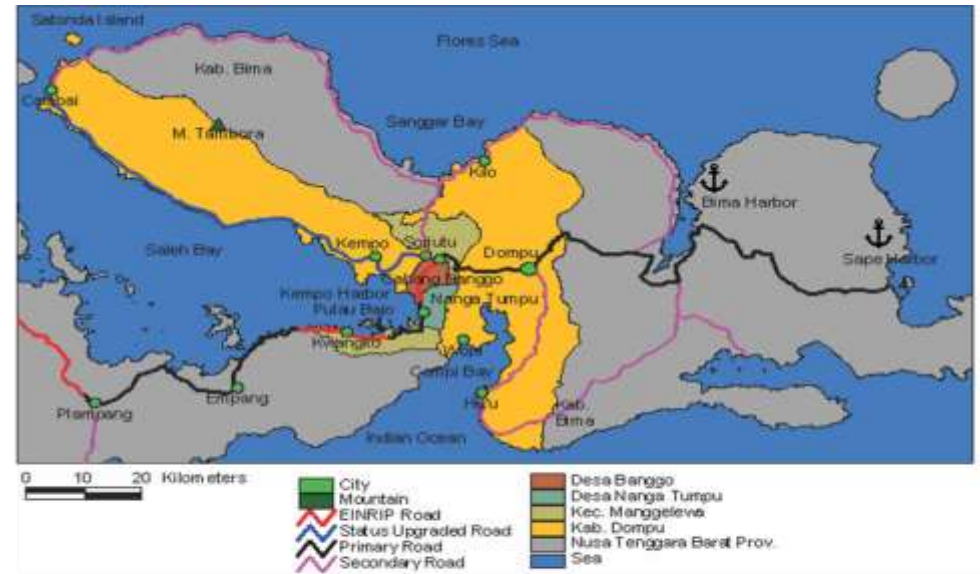
For the women's FGDs in Desa Nanga Tumpu, the researchers prioritized inviting the 2013 FGD participants. However, out of the 12 FGD participants, only three that had participated in the 2013 FGD. Overall, they represented all welfare groups and came from 3 *dusun* (hamlets) from a total of four *dusun* in the village. The information obtained in this FGD was compared to the results of the 2013 FGDs.

The women's FGD in Desa Maronge was conducted for the first time (no FGD was conducted in the previous study). Therefore, the trend analysis relied on information which was largely based on the memory of the participants concerning the condition of their village five years ago (2010) compared to the condition in 2015. The FGD was attended by ten participants, which represented all welfare groups and coming from five *dusun* (from a total of nine *dusun* in the village).

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<sup>1</sup>The results of the FGD with women in the previous studies are considered richer and more informative.





**Figure 1. Location of Project Road and Sample Villages in Kabupaten Dompu & Kabupaten Sumbawa**

Source: BPS (2010), West Nusa Tenggara Province Wall Map (National Coordinating Agency for Surveying and Mapping [Bakosurtanal], 2002), and Google Map / Earth (2015).

Note: SMERU used a mapping software to overlay digital images from these sources to create this map.

### 1.3 Schedule and Research Team

The field study was conducted over the period of 1–14 August 2015, and covering Kabupaten Dompu and Kabupaten Sumbawa. In Kabupaten Dompu researchers spent six days (from August 2–7 August) to conduct in-depth interviews and one FGD. Then the researchers then spent seven days (from 8 to 14 August 2015) in Kabupaten Sumbawa.

The researchers did not interview all of the 2013 respondents in Kabupaten Dompu due to the time constraint. The researchers prioritized interviewing government agencies in charge of the PIJAR program, national road managers, district road managers, business groups, schools, health workers, and people that are directly connected to transportation activities. The researchers also conducted in-depth interviews with the Kabupaten Sumbawa government agencies, as well as education and health institutions and business groups that had been interviewed during the 2011 study.

The research team consisted of four researchers. Two researchers had taken part in the 2013 study in Kabupaten Dompu, and another one had taken part in the 2011 study in Kabupaten Sumbawa. In addition, this study was also assisted by one local researcher from Lombok, West Nusa Tenggara.

## II. KABUPATEN DOMPU

### 2.1 General Description of the Area

#### 2.1.1 Kabupaten Dompus

Kabupaten Dompus is located on Sumbawa Island in the eastern part of West Nusa Tenggara (NTB) Province, at a longitude of 117° 42'–118° 30' East and 8° 06'–9° 05' South, at an altitude of between 15 to 62 meters above sea level. The district borders the Flores Sea and Kabupaten Bima to the north; Kabupaten Bima to the east; the Indian Ocean to the south; and Kabupaten Sumbawa to the west. The total area of the district is around 2,324 sq. km; including 472 ha in Pulau Satonda.

From 2008 to 2014, Kabupaten Dompus was administratively divided into eight subdistricts (*kecamatan*): Hu'u, Pajo, Dompus, Woja, Kilo, Kempo, Manggelewa, and Pekat. During this period, there was an increase in the number of *desa* (villages) and *dusun* (hamlets – a subdivision of a village): from 61 to 72 villages, and from 284 to 432 *dusun*. The number of *kelurahan* (urban villages) remained the same (nine).

In 2008, the total population of this district was 213,185; by 2014, it had risen to 234,665. Besides the indigenous Dompus, the population is made up of many migrants from Java, Bali, Lombok, Bima, Sumbawa, and Bugis, who have long been residents (since 1964) in the district. The local government has distributed arable land to migrants for farming and animal husbandry. Every year, Kabupaten Dompus receives transmigrants. In 2013, there were around 1,229 transmigrants, or about 300 households settled in Kabupaten Dompus (BPS Kabupaten Dompus: 2015b).

#### 2.1.2 Desa Nanga Tumpu

The sample village – Nanga Tumpu – is located in Kecamatan Manggelewa, and shares a border with Kabupaten Sumbawa. The Kecamatan Manggelewa is strategically situated on the road to Sumbawa, and includes the busy Banggo crossroads (Cabang/Simpang Banggo). The road is used by people from Java, Bali, and Lombok that is traveling to the eastern part of West Nusa Tenggara and East Nusa Tenggara (and vice versa). The number of villages in Kecamatan Manggelewa has continuously increased; from 9 in 2007, to 10 in 2008, 11 in 2011, and 12 in 2012.

Desa Nanga Tumpu shares its southern border with Desa Kwangko, which borders Kabupaten Sumbawa. To the north, Nanga Tumpu shares a border with Desa Banggo, to the east with Desa Woja, and to the west with the Gulf of Sape. Most of the land in the village (65%) is classified as a flat, 20% hilly, 5% river, and 10% sea area. A large part of the village is covered with forest, 90% of which is state owned.

Nanga Tumpu is located around 40 km from Kota Dompus, the district capital, and 19 km from Soritu, the subdistrict capital. Until 1997, Desa Nanga Tumpu was part of Desa Kwangko.

The village covers an area of 12.73 sq. km. The number of *dusun* increased from three to four *dusun* in 2014: Lara, Mekarsari, Napa, and Nanga Tumpu. Dusun Nanga Tumpu used to be part of Dusun Napa. All the *dusun* are located along the national road.

**Table 2. The Population of Desa Nanga Tumpu**

Year	Total	Male	Female	Households
2011	1,646	863	783	386
2012	1,665	873	792	386
2013	1,684	882	802	393
2014	1,746	915	832	402

Source: BPS Kabupaten Dompu (2012b, 2013, 2014a & 2015c)

## 2.2 The Economy and Land Use

### 2.2.1 Gross Regional Domestic Product

According to the 2010–2014 Gross Regional Domestic Product (GRDP) of Kabupaten Dompu, based on the 2010 constant price,<sup>2</sup> Kabupaten Dompu experienced the highest economic growth in 2011 (7.20%), but it slowed down in 2012 (6.18%) and in 2013 (5.06%). Hence, the economic growth increased again in 2014, to 6.14% (Table 3).

**Table 3. GRDP of Kabupaten Dompu, 2010–2014**

Year	GRDP (Current Price) (Rp million)	GRDP (2010 Price) (Rp million)	Growth Rate of GRDP (%)	
			Current Price	2010 Price
2010	3,084,874.27	3,084,874.27	-	-
2011	3,405,375.86	3,307,022.77	9.41	7.20
2012	3,696,178.09	3,511,426.42	7.87	6.18
2013*	3,969,129.65	3,689,042.83	6.88	5.06
2014**	4,475,950.63	3,915,419.13	11.32	6.14

\*Preliminary figure

\*\*Very preliminary figure

Source: BPS Kabupaten Dompu (2015a)

The agricultural, forestry, and fisheries sector has the largest contribution to the GRDP of this district. Based on an analysis of yearly growth in this sector, a decline in growth occurred in 2013 by as much as 3.73%, whereas in 2014 it increased by up to 6.03% (BPS Dompu, 2015a: 54). An important factor in 2012 was that corn was overproduced and could not all be absorbed by the market, dropping the price to Rp. 1,200 per kg. As a result, corn production declined in 2013, compensated by rice and soybean production.

Besides the agricultural, forestry, and fisheries sector, there are two other sectors (out of 17) which contribute significantly to the GRDP: (i) the small and large trade sectors (in this case, in the form of car and motor cycle repair shops), and (ii) government administration, defence, and social security.

<sup>2</sup>The purpose of calculating based on constant price is to eliminate the influence of price fluctuations so that the growth of real production of products and services can be determined. The constant price is based on 2010 price rates.

Based on sectoral GRDP growth between 2010 and 2014, shifts in growth in Kabupaten Dompu took place in the service sectors. This is evident from growth in the financial services and insurance sector (45%), followed by information and communications (44%), accommodation and food services (33%), corporate services (33%), real estate (32%), and large-scale trading and wholesale (car and motorcycle repairs) (31%) (See Table 4).

**Table 4. GRDP Growth Based on 2010 Constant Price: Five Largest Sectors \***

No	Sector	2010 (Rp million)	2014 (Rp million)	Growth 2010/2014 (%)
1	Financial services and insurance	81,401	118,154	45
2	Information and communications	31,062	44,576	44
3	Accommodation and food services	30,279	40,332	33
4	Corporate services	5,821	7,727	33
5	Real estate	92,902	122,193	32
6	Large-scale trading and wholesale; Car and motorcycle repair	439,611	578,049	31

\*Excluding the oil and gas sector

The area lacks major irrigation systems. Many crops depend entirely on rainfall, while others are watered by tapping rivers or from boreholes. A new dam (Rababaka Dam Complex) is under construction at Desa Tanju, Kecamatan Manggelewa, and it is intended to supply water to Manggelewa, Woja, and the Dompu areas (between the end of ENB 03 and Dompu). It is estimated that the Rababaka Dam Complex will be completed in 2018/2019. However, the dam will utilize forest areas (on loan) and the permissions from the Forestry Minister are yet to be issued. The plan is for the dam to collect rainwater which will then pass through the forest via underground canals.

The PIJAR agricultural development program, a NTB provincial government development program designed to increase the production of cattle, corn, and seaweed, was introduced in the Kabupaten Dompu in 2010. The corn intensification program involves the distribution of hybrid seeds, which require little water. The district government also guarantees to purchase corn at a fixed price, however in practice this has not transpired. The price of corn relies on market mechanisms because it is sold to private mills and drying facilities. The company owned by the Dompu government is not able to stabilize the price of corn.

According to data from the Dompu District Statistics Office (Badan Pusat Statistik–BPS Dompu), corn production increased by 818% over the period of 2010–2014, and the corn cultivation area increased by 396% —from 5,957 ha in 2010 to 29,547 ha in 2014 (Table 5). This extraordinary increase in land for corn cultivation brings with it concerns over the environmental impact, because the increases in available land encroached upon Community Forest Areas (HKm – *Hutan Kemasyarakatan*). One such effect is the land surrounding the Agreed Forest Area—a community-managed forest—has been planted with corn and subsequently prone to flooding (Box 1).

**Table 5. Production of Corn and Rice in Kabupaten Dompu**

Year	Corn			Rice (wet paddy and dry paddy)		
	Harvest Area (ha)	Average Production (quintal/ha)	Total Production (ton)	Harvest Area (ha)	Average Production (quintal/ha)	Total Production (ton)
2008	3,953	33.4	13,203	33,290	46.2	153,733
2009	6,526	31.1	20,309	34,907	45.9	161,135
2010	5,957	31.1	18,523	34,540	45.7	160,090
2011	15,765	35.1	51,284	35,467	46.6	165,205
2012	22,756	54.9	125,019	34,692	37.5	240,436
2013	21,593	54.9	118,632	17,728	11.2	197,713
2014	29,547	57.6	170,132	44,802	48.2	215,811

Source: BPS Kabupaten Dompu (2012a & 2015b)

### Box 1 Unintended Environmental Consequences of the Expansion of Corn Farming in Dompu

The successful implementation of the PIJAR, particularly in corn intensification, in Dompu has led to negative consequences, specifically those related to rampant illegal cultivation in forest areas. The government had tried to initiate a Forest Management Agreement with the surrounding communities to support their livelihoods, and the Village Head was able to issue Certificates of Wood Origin (*Surat Keterangan Asal Usul Kayu/ SKAU Kayu*) for local residents selling wood. However, these policies were in fact widely misused for the purpose of illegal logging, which led to their revocation by the head of District.

In Kecamatan Manggelewa, Kilo, and the boundary between Kempo and Pekat, Bangko, and Kwangko had experienced significant forest destruction. The most extreme deforestation occurred in Kecamatan Kilo because the forest was cleared, burned, and replanted with corn. Teak forest was already extinct after being harvested by the community. At the beginning of 2015, this situation could no longer be controlled. It has resulted in many wells drying up, and the Calabai natural springs also dried out because of the massive deforestation. Dompu experienced flooding in early 2015 and Bangko had landslides in which many stones fell down onto the road.

There has been a corresponding increase in corn storage and processing facilities. In 2013, a new processing plant was opened in Kecamatan Manggelewa, just beyond the end of ENB 03 (PT Seger). Now there are three warehouses/drying facilities along Segment B (ENB 03): two are located in Desa Doro Melo, and one in Suka Damai. An owner of one of the drying facilities stated that the good condition of the national road has supported new business opportunities, especially in transporting corn harvests from Kabupaten Dompu to corn drying facilities in Kabupaten Sumbawa. It occurs because the Dompu farmers' harvests cannot all be processed at the existing facilities in Kecamatan Manggelewa.

The numbers of cattle also increased by 43% during the five year period of 2010–2014, and the numbers of other livestock also increased (Table 6). On the other hand, the seaweed that is widely cultivated in the bays of Saleh, Sanggar, and Cempi, with the greatest potential being in the Bay of Saleh, did not experience the same pace of growth. The primary problem faced is the *ice-ice* disease, which attacks the stem of the seaweed, causing its color to be whitish and the plant to die. The *ice-ice* disease resulted in crop failure among farmers in Nanga Tumpu village in 2015. In

general, seaweed farmers still operate on a small scale, so they are unable to accept large orders. However, many companies are ready to buy. The products are mostly marketed to Malang and Bali in the form of jelly powder.

**Table 6. The Numbers of Livestock in Kabupaten Dompu**

Year	Cows	Buffaloes	Horses	Goats	Pigs	Free Range Chickens	Purebred Chickens	Ducks
2010	74,889	17,276	6,715	50,285	2,991	147,587	46,689	25,656
2011	85,612	19,431	7,387	51,319	3,349	162,713	54,658	28,478
2012	96,207	20,411	8,119	62,889	4,154	184,426	75,355	33,895
2013	88,615	22,078	9,580	70,271	4,907	202,870	91,695	37,284
2014	106,992	20,294	6,811	77,872	5,422	239,976	150,561	41,127

Source: The Office of Animal Husbandry of Kabupaten Dompu (BPS Kabupaten Dompu 2012a & 2015b)

### 1.2.2 Land Use Development

The successful intensification of corn cultivation resulted in the expansion of corn farming lands, from 3,000 ha in 2010 to 47,000 ha in 2014. Prior to the implementation of PIJAR, lots of land were unproductive or used to grow rice and soybeans. After the introduction of PIJAR, there was an optimization of land use for cultivating corn. Now, rice farming accounts for only around 10% of the arable land, the rest is used for corn cultivation.

The areas of Desa Kwangko and Desa Nanga Tumpu also emerged as the centers of economic activity, following the development of the national road to high standard. The district and provincial roads also experienced increased volume of traffic. This is accompanied by an increase in the value of land; 1 *are* (10m x 10m) of land—previously valued between Rp5–12 million—is now worth Rp70 million. The primary arterial road has blossomed with business establishments, warehousing, retail, and restaurant activities. The Dompu Regional Development Planning Agency (Bappeda) subsequently enlisted Kecamatan Manggelewa as an economically strategic region that is part of the integrated industrial zone of Manggelewa, as stated in Regional Regulation No. 2/2012 on the Spatial Plan for Kabupaten Dompu 2011–2031.

The already-improved national road also supports government effort to pioneer the development of a national-scale sugar cane mill at Doro Ncanga located near Tambora Mountain. The mill will be positioned near pasture lands covering between 5,000 and 7,000 ha and the project will be constructed by PT SMS.

With the presence of excellent roads, many people have been able to open new businesses such as stalls, stores, mechanic workshops, warehouses and similar ventures. Restaurants are also thriving since the road quality had been improved, and the State-Owned Electricity Company (PLN) has provided electricity connection for the last three years. In the past, the electricity was sourced from solar power. For those travelling on the Bima–Sumbawa route, the bus driver will stop for food and rest. The drivers have three choices; “Putri Solo” in Banggo, the “Putri Nanga Tumpu” restaurant, and a restaurant at Empang. Of these three eateries, there is one that has become a destination for family outings, the “Putri Nanga Tumpu” restaurant.



## 2.3 Livelihood and Welfare

### 2.3.1 District Social Welfare

#### a) Human Development Index

The general welfare of the population of Kabupaten Dompu is improving rapidly, as reflected in the increase in its Human Development Index (HDI) from 2008 to 2013 (Table 7). Kabupaten Dompu's HDI has improved from a middle category index ( $50 < \text{HDI} < 66$ ) to an upper-middle category index ( $66 < \text{HDI} < 80$ ).

**Table 7. Estimation of Kabupaten Dompu's HDI**

Year	Life Expectancy (years)	Literacy Rate (%)	Average Years of Schooling	Expenditure per Head (Rp Thousand/Month )	Score
2008	60.8	82.8	7.0	631.5	64.4
2009	60.9	82.8	7.2	635.5	64.9
2010	61.1	83.7	7.3	638.5	65.5
2011	61.2	86.4	7.7	641.8	66.7
2012	61.3	87.9	8.0	645.5	67.6
2013	61.7	89.1	8.0	648.4	68.1

Source: BPS Kabupaten Dompu (2015d).

Note: The HDI calculation is using the standard method being used prior to 2014

Since 2014, a new method has been used for estimating the HDI. Although the new method has resulted in lower HDI score of 61.44 in 2010 and 63.16 in 2013, the overall progressing trend remain the same.

BPS socioeconomic analyses in 2013 and 2014 (BPS Kabupaten Dompu, 2015e: 24-27; BPS Kabupaten Dompu 2014b: 17) show that the HDI progress has resulted from: (i) life expectancy increase as infant mortality and morbidity figures were reduced, and (ii) higher literacy rate because almost all school-age children go to school, while the aging population has a low literacy rate. Another important factor is the improvement of school infrastructure and facilities.

#### b) Poverty and Income Distribution

Poverty rate dropped from 24.5% in 2008 to 16.6% in 2013 (Table 8). The Poverty Gap Index ( $P1^3$ ) and the Poverty Severity Index ( $P2^4$ ) has also decreased since 2008. This shows that, in general, the condition of the poor has improved compared to the previous years.

<sup>3</sup> $P1$  is the average rate of expenditure gap of each poor resident against the poverty line, the higher the index, the farther the average expenditure rate of the poor will be from the poverty line.

<sup>4</sup> $P2$  indicates the distribution of expenditure among the poor. The higher the index score, the higher the expenditure gap among the poor.



**Table 8. Poverty Rate of Kabupaten Dompu**

Year	Poor Population (000)	Proportion of Poor (%)	P1 (Poverty Gap Index)	P2 (Poverty Severity Index)	Poverty Line <sup>a</sup> (Rp Thousand/ Capita/ Month)
2008	54.7	24.5	5.9	1.8	151.4
2009	49.5	21.8	3.4	0.8	182.7
2010	43.7	19.9	2.9	0.8	199.3
2011	40.3	18.2	3.0	0.7	211.5
2012	37.2	16.6	2.0	0.6	223.0
2013*	33.0	14.2	2.1	0.5	233.2

Source: BPS (2009, 2010, 2011, 2012, 2013 and 2014)

\*Calculated using Susenas Modul

<sup>a</sup>The poverty line is the sum of the food poverty line and the non-food poverty line. Those who have an average expenditure rate per capita per month below the poverty line are categorized as poor.

However, the official government data shows that there has been an increase in the income gap between the rich and the poor (Table 9). The Gini ratio for Kabupaten Dompu increased from 0.27 (2010) to 0.32 (2014). This ration is no longer below the national average for rural regions (.32). Furthermore, this data should be interpreted cautiously, as the Gini ratios were fluctuated remarkably, reaching the highest point in 2011 (0.38), then declining to 0.28 in 2013 and increasing again to 0.32 in 2014.

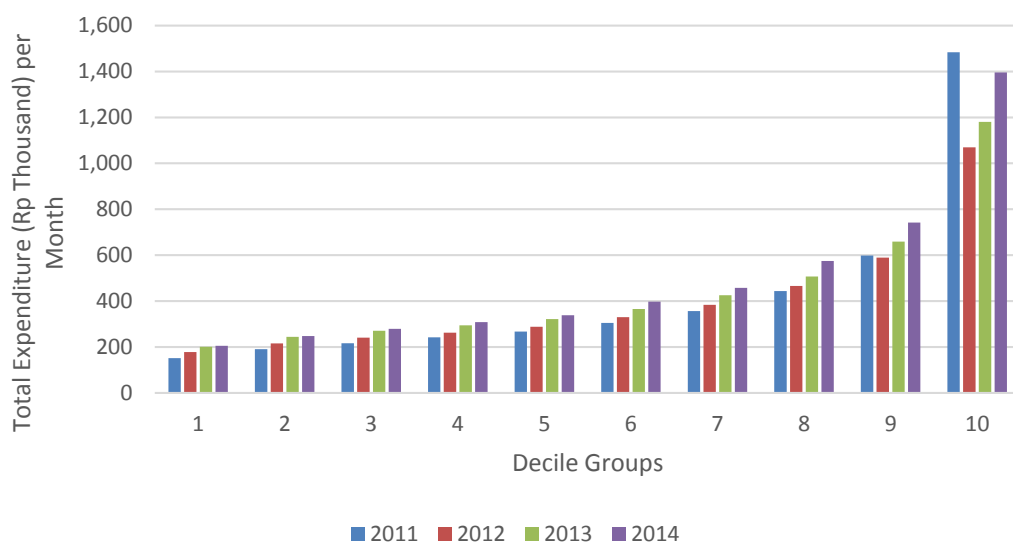
**Table 9. Gini Ratio for Kabupaten Dompu District 2008-2011**

Year	Gini Ratio			
	Dompu District	West Nusa Tenggara Province	Indonesia (Rural)	Indonesia (Urban+Rural)
2010	0.27	0.40	0.32	0.38
2011	0.38	0.36	0.34	0.41
2012	0.31	0.35	0.33	0.41
2013	0.28	0.36	0.32	0.41
2014	0.32	0.38	0.32	0.41

Source: Susenas 2010–2014 and BPS 2015

If the Kabupaten Dompu population is divided by decile based on expenditure over the period 2011–2014, there is an observable increase in purchasing power<sup>5</sup> for deciles 1 through 9, while decile 10 experienced a decline. The total monthly expenditure of a person from the poorest group (decile 1) underwent a 36% increase. while the person from the top decile (the wealthiest group) experienced a drop of 6 % (See Figure 2). Although most groups experienced an improvement to their welfare, the difference between the expenditure of poor and wealthy deciles remains significant.

<sup>5</sup>Purchasing power in the ability of the community to purchase goods and services. Purchasing power is calculated based on per capita expenditure from Susenas.



**Figure 2. Total Expenditure per Capita per Month Kabupaten Dompu 2011-2014**

Source: Susenas 2011–2014 (calculated by SMERU)

Based on the results of this year’s qualitative study, there is an increasing gap between the incomes of the rich and the poor in relation to opportunities to participate and benefit in the corn industry. This can be seen from the increasing size of land for corn farming owned by the wealthy, while the poor still rely on employment as laborers. Opportunities for increased incomes from corn cultivation, which should be enjoyed by the poor, have not eventuated, because the poor do not have land and sufficient capital to grow corn. The poor can only borrow capital from the wealthy or from money lenders in the village. After harvest, they then must sell the product to the lenders. The lender essentially switches professions during harvest time to become a crop trader.

### 2.3.2 The Livelihoods of the Nanga Tumpu Villagers

The majority of Nanga Tumpu villagers rely on dryland farming, livestock breeding, and fisheries for their livelihoods. The dry land is generally cultivated with rice and seasonal crops such as corn, onion, mung bean, and soybean. Since 2010, corn has become the main farm product; some farmers also cultivate seaweed. A large number of farmers also raise cows, bulls, horses, goats, or chickens to be sold when the farmers need extra money or injection of working capital.

In 2013, Nanga Tumpu villagers started to grow corn more intensively and this increasing trend continues in 2015. This provides an opportunity for women in the village to work as farm hands. As a consequence, the dominant farming product in the village, aside from onion and rice, is corn.

Farmers from the wealthier group started planting their own corn in 2013. Middle-class households tried to cultivate corn in 2014. They learned how to do it from their neighbors or farmers, who had previously planted corn. The poor group from the older generation that owns land usually still do not want to plant corn, and only plant rice, while poor young families started planting corn in 2014. Through PIJAR program, farmers have opened up some forest areas for farming and they use the land to plant corn.

The majority of farmers work on their own land, which usually ranges between one and three hectares. Relatively few farmers own land more than ten hectares; although in 2015, some owned more than 20 ha and hired farm hands.

The number of people migrating from Kabupaten Bima and renting land to plant onion also increased. Landowners in Nanga Tumpu are still willing to lease their land to farmers from Bima for onion cultivation. The leasing rates depend on the position of the land itself, the availability of water, and the cropping pattern. The leasing rate will be higher for land located on the higher ground, with easy access to water and able to accommodate cropping pattern of three harvests per year. The lease rates are between Rp5 million and Rp12 million per hectare.

Male and female farm hands receive the same wage. In 2015, there were two wage rates: Rp70,000 per day and Rp50,000 per day. The first rate is for farm hands who bring their own food and drink and whose working hours are from 7am and 5pm with an hour break between midday and 1pm. The latter rate is for farm hands working on lands belonging to Nanga Tumpu villagers; their work hours are from 7am to 5pm (or 4pm if it rains), with three half-hour breaks in between.

In 2012, a lot of poor migrants came from Bima to Dusun Lara to make a living by cutting teak trees and selling them to furniture manufacturers in Dusun Lara. With the slow-down of furniture-making business, the migrants had left the area. There is only a handful of furniture business owners left in the village, although they are located in the four hamlets in Nanga Tumpu. In 2015, there was only one furniture business in each hamlet.

The 2013 study found that the number of women from poor families who worked as migrant workers had increased. In contrast, the 2015 study uncovers that the number of migrant workers has decreased. This is related to the fact that migrant workers have been unable to bring back sufficient capital and improve their welfare. Meanwhile, the villagers who do not migrate overseas managed to improve their general welfare from farming. The returned migrants are now working as farmers again.

The government-funded assistance programs that target the poor, such as Raskin (*Beras untuk Keluarga Miskin* – Rice for Poor Households), Jamkesmas (*Jaminan Kesehatan Masyarakat*—Public Health Insurance for the Poor), and PSP PNPM Perempuan (*Program Simpan-Pinjam PNPM Perempuan*—the Women's Savings and Loans Program of the National Program for Community Empowerment), are still in effect. However, the number of poor households receiving Raskin subsidies has decreased, from 213 households (2011) to 108 households in 2012, 105 households in 2013, and 103 households in 2015. The number of Raskin recipients is determined by the central government.<sup>6</sup> This is also the case with the recipients of Jamkesmas, which now has transformed into the BPJS Health Sector program. However, there has been an additional quota for 50 poor households whose premiums are paid by the provincial government. In 2014, there was a government program to renovate the dilapidated homes of poor and very poor households, which totalled 200 households (the criteria included things such as, not owning a motor vehicle, not owning any land, etc.).

In the 2013 study, many wealthy households had started new businesses, such as grocery stores, and seaweed farming. New economic activities have been supported by road improvements, which has allowed for a number of government agencies in Dompu to distribute aid packages. A noticeable development has been the growth of grocery stores. In addition, distributors are now better able to travel longer distances to deliver goods to the grocery store owners. Meanwhile,

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<sup>6</sup>The central government allocation is determined based on the poverty rate.

the emerging seaweed industry experienced failed harvests in 2015 because of *ice-ice* (white spot) disease. Another factor is the presence of “red water” that causes seaweed, shellfish, and fish to die. The local fisheries agency explained that the “red water” is a natural phenomenon and not waste.

A continuity from the 2013 study is the fact that farmers usually sell their products to intermediaries from Dompu, Bima, and Sumbawa. Because the road has been improved, the number of vendors visiting the villages has increased and additional competition has resulted in higher prices for farmers. There are still many residents of Nanga Tumpu Village who sell their products to intermediaries at the village level. Typically, these intermediaries have obtained approval from the local farmers group.

A further similarity is with 2013 findings is that women’s important economic role in the village. In addition to working on the land, they actively participate in group savings and trading activities (as intermediaries for rice and pulses, and as mobile vendors and traders of fish). In general, the division of labor between women and men from the village of Nanga Tumpu is highly dependent on the physical condition of the members of the household and their income levels. Wealthier households typically hire workers to work in the fields. In middle-class households, women usually help their husbands in the fields, from planting through to harvest.

In general the community still feels the benefit of a number of assistance programs even though they have now ended. For example, savings and loan programs that were exclusively managed by women (the PNPM program 2008–2014), clean water pipe construction through the PIDRA program (concluded in 2008), the SWS toilet and well construction program (1990–1992), the MCK (*Mandi, Cuci, Kakus/Bathe, Wash, Toilet*), the economic road construction program at *dusun* level as part of PNPM (2008–20114), and a number of Plan International programs between 2008 and 2013 related to toilet improvement, wells, housing quality (rooves and cement walls and floors).



**Figure 3. A vendor cycling through Desa Nanga Tumpu**  
(Tuti Widiastuti/SMERU, 2015)

### 2.3.3 Community Welfare<sup>7</sup>

In the previous study, women’s and men’s FGDs arrived at somewhat different welfare classifications. In 2008, the women’s group identified three classes of welfare (poor, average, and rich), but the men’s group identified four (very poor, poor, average, and rich). In 2013, they identified five groups (very poor, poor, average, rich and very rich) but in 2015 the women’s FGD came up with four groups – without the very rich group. The characteristics that differentiate different welfare groups are amongst others: condition of the house, extent of livestock holdings, extent of land ownership, and assets (Table 10).

**Table 10. Welfare Group Characteristics – Perceptions of Women’s FGD**

Indicator	Rich	Average	Poor	Very Poor
Housing - 2015	Concrete-walled house, tiled floor, concrete fence with metal gate	concrete-walled house, cement floors, bamboo/wooden fence	Stilted house, floor boards, or concrete-walled house with tiled floors	Bamboo homes, using other people’s land, dirt floors
	Private well with pump, private toilet	Private well and toilet	Use neighbors’ well, basic toilet	Toilet use of neighbors’ wells
	Cook with a gas/kerosene stove	Cook with a gas/kerosene stove	Cook with a kerosene/wooden stove	Cook with wood stove
	Complete set of appliances: TV, refrigerator, washing machine, water pump.	Incomplete appliances: refrigerator, electric or manual water pump	Simple furnishings and appliances	No appliances
	Electricity to 900 VA, at a cost of Rp.2.5 million	Electricity to 450VA, at an installation cost of Rp.1. 5 million	Used electricity from other households’ connection; Rp 20. 000/ month	Use of kerosene lamps
Housing - 2013	Ceramic (tiled) floor, generator, water pump	Tiled floor, generator, TV	Stilt house, thatched roof, bamboo flooring	Hut, bamboo floor, kerosene lighting, no electrical lights
	Private toilet (WC)	Private toilet (WC)	Use an existing toilet facility - WC programme 1994-95	Do not own a toilet, or use other people’s toilet; do their ablutions in the river or in the forest.
	Cook using gas and wood fires	Cook using wood fires	Cook using wood fires, kerosene lamps	Cook using wood fires and do not have any electrical connections

<sup>7</sup>The analysis presented in this section is derived from in-depth interviews—with local government officials, households, and business owners in Nanga Tumpu—as well as focus group discussions (FGDs) with women group; and the result from the 2015 is compared with the results of the 2013 study.

Indicator	Rich	Average	Poor	Very Poor
Livestock -2015	Cattle, buffalo, horses, goats (20–50 head) chickens: 100 chickens	Cattle, buffalo, horses, goats (3–5 head), chickens: 20 chickens	Goats 2 head, chickens: 10 chickens	Chickens: 1–2 chickens
Livestock- 2013	Livestock - cows, sheep, buffalo (4–5 head)	Sheep, buffalos (1–2), chickens birds	Look after other people's livestock	Chicken (1–2 chickens)
Land Ownership -2015	5–20 hectare	1–2 hectare	½ - 1 hectare	No land
Irrigable Land - 2013	± 10 hectares	2 hectares	Borrow land for farming, share the harvest with the owner.	Rely on others, build house on other's land
Assets/ Wealth -2015	Own a car/truck (Kijang, Avanza, pick up). a motorcycle for each child, cash reserves	Second-hand motorcycle bought with cash, new motorcycle bought on credit	Old motorcycle from the 1970s (priced at around Rp2 million), without ownership papers. Also bicycles.	-
	Have education insurance	-	-	-
	bank savings to the value of Rp40–100 million	bank savings to the value of Rp2–Rp 3 million	Cash savings < Rp 1 million	No savings
	No need to borrow money	Borrow money from moneylenders, up to Rp.1 million	Borrow money from moneylenders, up to Rp.250, 000	-
Assets/ Wealth -2013	Own a mobile phone (HP) (each member of the family)	Own a mobile phone (HP) (each member of the family)	Own a mobile phone (HP) which costs around Rp 150,000	There are those with a mobile phone (HP) and those without, (price is around Rp150,000), the phone is often owned by a friend or given to them. The phone is used most often to receive messages, usually they wait until night to send SMS messages (free).
	Own a motorcycle	Own 1 motorcycle	Own a motorcycle without registration papers, do not pay tax and does not have number plates.	Do not own a motorcycle, borrow them from other people (or rent them) when needed, if they need to go somewhere they are taken by a friend.

Table 11 presents the changes to the welfare composition of Desa Nanga Tumpu from 2008 to 2015. In 2008, women’s FGDs classified 38% of households as poor, while 51% were consider average and the remainder rich. In 2013 they identified a substantial increase in the number of rich and very rich households (from 11% to 17%), a reduction in the number of average households from 51% to 25%, and a very minor shift in the number of poor people, although a large group of households classified as very poor emerged (19%). In 2015 the lives of the community are increasingly prosperous. Importantly, the number of households belonging to the average group increased from 25% to 41% and the number of poor households decreased significantly from 37% to 26%.

**Table 11. Household Classification in Desa Nanga Tumpu (Women’s FGD)**

Year	Very Rich	Rich	Average	Poor	Very Poor
2015	-	20	41	26	13
2013	2	17	25	37	19
2008	-	11	51	38	-

The very rich classification only emerged in the 2013 study, but not in the 2015 study. This is because as the very rich individuals age, their assets (such as houses, land, and cars) are divided among their children. Their capacity to develop businesses also declines. In general, the rich—those still physically active and able to embark on business ventures—experienced an increase in their welfare levels compared to 2013.

In 2015, the proportion of people classified in the average welfare group increased. This is a result of increasing profits from the cultivation of corn. During the 2013 cultivating season, many members of the community had started to grow corn. The harvest produced good outcomes; one hectare of land can produce eight metric tons of corn with a value of Rp2,300–Rp2,500 in 2013/2014.

Because of this, residents are no longer willing to sell their land to farmers from Bali. They prefer to work on their own land and grow corn, rice, mung beans, and soy beans. If a resident is willing to rent out their land, the annual rate is usually Rp3,000,000 to Rp. 5,000,000 per ha for corn cultivation.

The 2015 FGD participants pointed out that with the existence of the PIJAR program, if people work hard, they will definitely make money. Even more as the wage of farm hand increased from Rp40,000 per day in 2013 to Rp50,000–Rp. 70,000 per day in 2015. As a result, the welfare of the poorest groups has improved as long as the family members are willing and able to participate in this kind of work. Households classified as poor are rapidly moved up into the average welfare bracket, but there may be a delay because it can take time to build up the assets that are markers of average welfare status. Hence, the FGD participants said that some of the very poor people are lazy based on the fact that it is difficult to find and hire farm laborers, particularly during the corn harvesting season.

The results of the FGDs and household interviews suggest that there have been increases in the size of land owned by the wealthy. In 2008, rich people were identified as those owning more than 3 hectares of land and 5–6 goats or cows; in 2013 the criteria for this classification increased to 10 hectares and over 50 heads of livestock. Moreover, the land holdings necessary to be classified as of average welfare increased from under one hectare of land to two hectares, and from 3–5



animals to “less than 10”. Meanwhile, in 2015, ownership of land among those considered rich increased to between 5 and 30 hectares, and ownership of cows or buffalo increased to between 20 and 50 heads. Also in the 2015 results, it is found that households of an average welfare classification—who in 2013 were thought to have 2 animals—now are thought to have 1–2. This reduction is possibly because formerly-poor households have joined the average classification and not yet built up the assets of those households who have long been categorized as average. Similar to the results of the FGDs in 2013, the increase in economic activities is partly because of the road improvement and agricultural development.



**Figure 4. A women’s FGD in Desa Nanga Tumpu**

(Rahmayati/SMERU, 2015)

### 2.3.4 Social Life

The local people reported significant social impact of the EINRIP road on family relationships; family relationships have been strengthened now that it is easier for them to visit each other. The improved road has made their relatives, who live in distant locations, more willing to come to visit them. During festive periods—especially following Idul Fitri—people receive invitations from their relatives to come to ceremonies such as weddings, circumcisions, and hajj-related events.

In addition, more and more women are confident to use the national road until night time (8 or 9 pm) if they need to get medicine from the *puskesmas* or hospital. It is common to see women and girls riding motorcycle now.

An aspect of the social system which frequently causes trouble stems from the way people raise their livestock. Animals such as cows, buffaloes, and goats are commonly left free to graze, and often wander around uncontrolled. Until today, people still practice this way. During the planting season, cattle are usually tied to poles or herded to graze, and in the afternoon they are herded back into their enclosures. However, during dry season, people just release their cattle into an open area and then look for them again in the afternoon. In this way, cattle often cause damage to plants. When such thing happens, the people usually meet to discuss compensation that will be calculated on the basis of the number of the damaged plants. In such cases, compensation is usually given in the form of fertilizer. Owners of the livestock will collect money and use it to buy fertilizer for the plant owners. The recalcitrant livestock are then tied to poles, and the social relations return to normal. Another frequent occurrence is cattle theft. Meanwhile, livestock roaming freely on the road remains significant risk to road safety.



The social conflicts in Kecamatan Manggelewa may take the form of communal fighting between residents from two different villages. The triggers of conflict are usually private problems such as road accidents (as in a conflict between residents of Desa Doromelo and Desa Soritu), and juvenile delinquency resulting in activities such as drag racing (as in a conflict between residents of Desa Anamina and Desa Soritu). If there is a physical communal conflict between villages, the traffic is disrupted because the road will be closed for one day. The most worrisome aspect is that conflicts between residents from different villages may involve homemade firearms.

When the price of corn declined in 2015, masses of people organized a demonstration by blockading the entrances to two corn-drying factories/dried-corn warehouses (PT Seger and a private sector). They demanded that the corn price, which had fallen to between Rp1,200–Rp2,200 per kg, be made the same as in 2014 year, namely between Rp2,500–Rp2,800 per kg. This demonstration made one business respondent feel very unsafe, and the police had to be called to safeguard their factory.

## 2.4 Transport Sector and Services

### Road Sector Infrastructure

The national road that connects Dompu and Sumbawa is a busy road as it goes through several urban areas, especially at Banggo. Various means of land transport such as trucks full of farm products and livestock, inter-provincial and inter-district buses, *ojek*, and horse-drawn carriages use this road. The number of buses traveling the road increases significantly around the Idul Fitri holiday season.

In 2008, the national road was only 4.5 meters wide, a width considered too small as trucks were forced to slow down to avoid accidents. In 2013, all parts of the road were upgraded (funded by either EINRIP or the national budget) and are now 6–8 meters wide. The EINRIP roadworks have been complemented by other road improvement activities so that it cumulatively increases connectivity to major economic centers.

The “Tambora Greets the World” event on 11 April 2015 accelerated the road and bridge construction work to the north of Dompu, especially at the locations passed by President Joko Widodo when he came to officially announce the Tambora Mountain National Park open for public. The status of the Dompu-Tabora provincial road has also been upgraded that of national road.

The road area from Sante fork to Kambuh fork (in Kecamatan Kilo), passing through five villages in Kecamatan Manggelewa—Doromelo, Lanci Jaya, Suka Damai, Nusa Jaya, and Kampasi Meci—have also been restored with other financial aid from Australia. The condition of this provincial road is now better than the national one because it has drainage on both sides. Its status will be upgraded to national road once the Kilo Port has been completed.

### Ports

The Kilo Port in Dompu has now also been listed as a national port, although it is still in the land acquisition stage. It is expected to be able to accept vessels weighing up to 6,000 tonnes. The regional government hopes that the Kilo Port development will receive financial support from the

central government, because Kabupaten Dompu does not have sufficient financial capacity and is only able to provide the land.

The Port of Kempo is categorized as Type C port. According to a district officer, this port still lack some facilities, and needs upgrading of the equipment for optimization of the port. At this time, Kempo and Calabai ports are already used for the transportation of goods.

### 2.4.1 Intercity Transport

There remain two companies that provide intercity services from Kabupaten Dompu: PO Dunia Mas dan Sinar Rejeki. Bus Sinar Rejeki services two routes, between Dompu–Mataram (a large bus) and Bima–Sumbawa (a smaller bus). PO Dunia Mas services the Bima–Jakarta route (big bus) and provides a tourist car rental business. Long distance services use large buses and depart in the evening from Ginte Bus Station in Dompu at 19.30 and 20.00

With the improved road, business competition is becoming fierce. Smaller bus companies that served the intercity route from Bima to Sumbawa now total seven companies (Jawa Baru, Iwan Putra, Rahma Putra, Langgeng Jawa, Bima Permai, Tiga Putra and Sinar Rejeki). In 2014–2015, competitors from Jakarta, Surabaya, and Sumbawa arrived and started to serve the Jakarta–Bima route. Previously, the competition was between three local companies.

Generally, the increased competition is good for short-route passengers because a smaller bus is likely to arrive every 10 minutes. However, passengers also complain that a lot of bus drivers make frequent and long stops along the route to attract more passengers. Bus passengers stated that in 2013 bus travel was fast and convenient. Long distance passengers have greater choice and can select newer/better looking vehicles.

As competition among bus companies gets tougher, each of them suffer from declining passenger numbers. The decrease in the number of passengers has also been caused by the recent opening of air transport facilities in Sumbawa and a significant increase in motorcycle ownership.

The bus fare from Dompu to Sumbawa has risen from Rp25,000 to Rp40,000, while the fare for the Bima–Jakarta route has increased from Rp500,000 (2013) to Rp800,000 (2015). This increase in price is the result of higher diesel prices.

A large bus carries 35–40 people only during school holidays, and the Christmas, New Year, and Idul Fitri holidays. During the harvest season, there is no increase in the usual number of passengers. This is different to the 2013 findings, where it was found that there was usually an increase in passenger numbers from May to August, during the harvest and school/university enrollment period.

A benefit that is still felt is the cost of vehicle maintenance, which dropped because shock absorbers have a longer life on better quality roads. Tyres and brakes are routinely checked by mechanics based on distance travelled.

### 2.4.2 Local Transport

For local transportation, a lot of people take buses, minibuses, or motorcycle taxis (*ojek*), the number of which is now considered too high; as a result, the competition among transportation service providers is tough, and has reduced incomes. This is also caused by the growing number of people who own motorcycles, another impact of the successful PIJAR program.

Transport services between villages are conducted from the terminal at Cabang Banggo. Based on field observations, the terminal is increasingly neglected and quiet.

One respondent, a minibus driver (*angkutan perdesaan/Angdes*), services the route through Cabang Banggo-Kwangko–Cabang Banggo-Dompu, and owns two vehicles. The respondent plans to retire from driving public transport in two years. The respondent experienced a decrease in gross monthly income from Rp400,000–Rp500,000 in 2013 to Rp200,000–Rp300,000 in 2015.

The routes and operational hours of *ojek* used to be flexible; but now they generally wait for passengers at certain places because of the increasing number of *ojek* drivers, minibuses, and motorcycle ownership. Some *ojek* drivers operate only from morning to afternoon, some only in the evening.

Horse-drawn carriages (*cidomo*) are now rarely seen and generally only operate on the city outskirts. A lot of them are used for selling vegetables in the villages. *Cidomo* were formerly used for student transport and are now used by women to go to the market.

### 2.4.3 Freight Transport Operations

The national road in Kabupaten Dompu is part of freight and cargo route from eastern Indonesia. Trucks leaving from Bajo Port (Kabupaten Manggarai Barat, East Nusa Tenggara) and arrive at Sape Port (Kabupaten Bima, West Nusa Tenggara). Trucks travel through the national road in Sumbawa island towards Poto Tano port (Kabupaten Sumbawa Barat, West Nusa Tenggara). Sape Port is located in the eastern corner of Sumbawa island, while Poto Tano port is in the western part of the island. After passing through Sumbawa island, trucks cross the ocean towards Lombok and continue their journey by sea to Bali and/or Java.

The local ports in Kabupaten Dompu, which are periodically used to send goods to Surabaya and Kalimantan, are located in Kempo and Calabai. After corn drying and storage facilities started operating in 2013, the business owners in Kecamatan Manggelewa use Kempo Port to send corn products to Surabaya, East Java (landing in Tanjung Perak or Probolinggo ports). Previously, the route for sending corn to Surabaya (Tanjung Perak port) went through Lembar port (Kabupaten Lombok Barat), which involves a long overland journey, before travelling by sea to Lombok. By comparison, corn can now be transported directly to Surabaya from one of the local ports without needing to transit in Lombok. One respondent, a corn drying facility owner, explained that they used Kempo port more often than Bima port (75% and 25% respectively).

The EINRIP road has facilitated significant improvement of the area's economy, especially the aspects related to the PIJAR Program. The increase in corn production brought about by the PIJAR program was followed by the construction of eight corn warehouses which include four large warehouses alongside the national road. During the harvest season, the driver of corn transporting trucks said that they can now complete two runs, day and night, compared to only once a day previously. They travel from the corn-drying factory/warehouse in Kecamatan Manggelewa to Port of Kempo (Soro Harbour) and Port of Bima.

The transport of livestock also generally relies on Bima port. This is unchanged since the 2013 study. Animal transport has to be done during the day to avoid theft. Transport of cattle through Bima Port will become easier because the national government implemented a program in November 2015 which introduces special ships to transport cattle. The plan is for the motorized

vessel Camara Nusantara 1 to be assigned to Tenau port in Kupang (East Nusa Tenggara) to service the Kupang-Bima-Tanjung Perak-Tanjung Emas-Cirebon route (Koran Tempo, 2015).

Trucks bearing excessive loads are still present. The number of pickup trucks and dumptrucks used for business has increased. During the corn harvest many buyers come from outside the village. Traders used to use to pick-up trucks to transport agricultural products and livestock purchased from farmers, but now they can use medium-sized trucks that can enter the village.

In the last two years (2013–2015), many trucks have been queuing up in front of corn warehouses/corn-drying factories. This demonstrates the extent of corn production and processing in the area. Truck drivers park their vehicles on the shoulders of the national road and this may cause damage to the facility due to their heavy weight. However, the road shoulders are in fact still capable of supporting the weight of the trucks, although this should be a aspect of road quality to consider into the future.

Much of the corn farmed in Dompu is absorbed by PT Seger's other warehouse in Sumbawa. The main reason for this is that truck drivers prefer transporting the corn to this warehouse, rather than queueing at the Dompu warehouse.

Respondents in this study generally reported that the number of vehicles that use the national road has increased overall, including freight trucks—however the increase in motorcycles has been most observable. Freight transport to other districts or provinces, which was previously done with trucks, has been scaled up and now larger trailer or container trucks are used. Many such vehicles travel from Java to Bima, transporting basic commodities (*sembako*), construction materials, and ceramic goods. Aside from corn, products transported on the return route from Bima to Java include scarp metals, second-hand goods, and other agricultural products.

In the study villages there has been an observable increase in the number of mid-sized vehicles available for hire. In the Lara hamlet, there are four pickups and one truck, while in Nanga Tumpu hamlet there are five pickups and one truck.

The traveling time for transportation has increasingly been reduced. It only takes six hours now for a truck to carry goods from Poto Tano port to Dompu, compared to 12 hours previously. When the road was still in a bad condition, it was standard to expect one shipment in a month, but now two shipments are made each week on this route.

#### 2.4.4 Road Safety

Following the EINRIP Road Construction Project, people feel that the road condition is much better and much smoother to be passed through. Therefore, bicycle and motorcycle riders as well as car drivers in particular, and the local people in general, feel confident travelling on the road. The Banggo fork area of the road has also been surfaced with hot-mix asphalt concrete.

The number of road accidents has reduced, but there are still people who speed excessively along the primary arterial. Pollution has increased because of the increase in the number of vehicles using the road. Accidents among night buses may occur because of fatigue. There are collisions of *ojeks* because of speeding, usually resulting in minor injuries. Flood-prone sites remain unchanged, that is, at Manggelewa market. This is still caused by rubbish, which overflows into the street or waterways because the Waste Management Agency does not collect rubbish every day.

A section of the arterial road already has a section that is in disrepair. There are potholes in a part of Segment A (road corner) before Kwangko village. There are also large potholes in Segment B, located in the School Safety Zone. Potholes in Segment B have caused motorcycle accidents, because drivers fall from their vehicles.<sup>8</sup> The repair of potholes will also include remarking of the School Safety Zones.

During the corn harvest, many trucks queue in front of the dried corn warehouses/corn-drying factories. As a result, there are many scattered remnants of corn on the road, which are in turn eaten by goats. An accident occurred involving 2–4 motorcyclists, who crashed into the goats. Many road signs have already been lost.

Thuggery is still apparent, especially on the road from Dompus to Sumbawa. Criminals often throw rocks at the body or windows of buses. Livestock still often roam free on the road in search of food. This makes the area more prone to accidents. Cases of buses hitting cows, buffalo, or other livestock still occur. Where a cow is struck, a replacement cost of between Rp1 million and Rp2 million applies. The cost for hitting a goat is between Rp200,000 and Rp300,000.

Landslides along the cliffs of Nanga Tumpu still occur. These are caused by people who steal rocks at the bottom, leaving the rocks at the top liable to fall. Rock falls of this type can occur during rainy as well as dry seasons. The individuals who remove the rocks are not the residents of Nanga Tumpu village.

Based on information from a health assistant at Desa Kwangko, motorcycle accidents often occur in Dusun Ncuni (Desa Kwangko) due to the debris from rock slides/landslides at one of the road bends in the area. The accidents usually occur during the rainy season (December to April).



**Figure 5. A junior high school student in Kabupaten Dompus riding a motorcycle without a helmet**

(Rahmayati/SMERU, 2015)

<sup>8</sup>In July 2015, there were three motorcycle accidents. Then, a resident of Desa Banggo (Mr. Yusran) whose house is situated in front of the location of the potholes took the initiative to cover the potholes with cement fill. His purpose was to prevent accidents from happening, especially for motorcyclists, who cannot easily avoid, or do not know that there are potholes, especially at night.

One school respondent (school principal of an SMP) said that there has not been a campaign for traffic safety that was organized by the police. The police only disseminated information on the danger of drug abuse to students. Many motorcyclists do not understand the School Safety Zone road sign; they do not reduce their speed. There was once an accident in front of the school, where a senior high school student was speeding and fell. The accident was not fatal, but still he had to be rushed to the hospital.

A road safety program was initiated by the Transportation Agency, the Students Pioneering Traffic Safety program. This program commenced at a central level in 2010, but the program was only implemented in Kabupaten Dompu in 2015. The new program is meant for trained students to reach out to other students and make them understand the importance of traffic safety.

## 2.5 Health and Health Services

### 2.5.1 Health Conditions

In 2008, the most common illnesses were respiratory ailments, malaria, influenza, diarrhea, and headaches. In 2013 the common health complaints were diarrhea, fever, coughs and cold. During harvest season, there are many complaints of joint pain. The number of malaria cases fell following the distribution of mosquito nets in 2012. In 2015 the most common types of illness are respiratory ailments, diarrhea, fever, cough, hypertension, TB, and gastric ulcers. Motorcycle accidents sometimes happen, even though the number has decreased.

In the past, cases of child malnutrition were common because of imbalanced diets. They usually consumed dried fish and sour soup. Nowadays there is no report of malnutrition because the economic level of the people has improved.

Cases of upper respiratory tract infection (ISPA) are still dominant, probably due to pollution and allergies. The number of malaria cases in Desa Soriutu is small although malaria is endemic in Kabupaten Dompu, notably in Calabai which is a seaside area.

Despite these improvements, there is a need to anticipate the spreading of HIV/AIDS, TB, and malaria. HIV/AIDS and adolescent reproductive health are included in the public health education program, as well as the devastating effect of drug abuse. Students are included in the program through the School Health Initiative (UKS). Until now, Puskesmas Soriutu has never dealt with any HIV/AIDS cases.

At present, the potential for violent conflict is high, and should be taken into account in the provision of health services. Ethnic conflict or inter-village brawls may erupt anytime. The heterogeneous composition of the society in Kecamatan Manggelewa has made the situation more problematic. A personal conflict may erupt into a full blown group conflict. For example, a village brawl could be triggered by a road accident in which a person from Desa Doromelo was hit by a villager from Desa Soriutu, or vice versa. Even people living in the same village might be involved in a brawl (for example, between villagers in Dusun Jati Mengi and Dusun Jati Baru, in Desa Teka Sire). The victims of these village brawls suffer from puncture wounds; some suffer from gunshot wounds from military or homemade firearms. Some of these victims sometimes need to be referred to a hospital in Bali.



## 2.5.2 Health Care Services

### a) Health Care Services

The health service facilities located in Nanga Tumpu are a *pustu* (*puskesmas pembantu* –an ‘assisting’/subsidiary *puskesmas*) staffed by nurses, and a *polindes* (*pondok bersalin desa* – village maternity center) staffed by a midwife. In 2008, health services at both facilities were often neglected because the nurses and midwife spent more time at their private practices. After the road improved and electricity became available, the nurses and midwife have felt more comfortable living in the village. Now the services at *pustu* and *polindes* are better; they open every day and many people come seeking medical services.

Aside from going to the *pustu* or *polindes*, some people go to private doctors’ practices or to the *puskesmas* located in Cabang Banggo. They use village transportation or *ojek* (motorcycle taxi). The fare for village transport is Rp7,000, while the *ojek* fare is Rp15,000 for one way trip. Three years ago the fares for village transport and *ojek* were Rp5,000 and Rp10,000, respectively.

In 2013, the cost for a health check-up and medicine provided by the midwife was Rp10,000 (including medicine), while nurses at *pustu* or the doctor at *puskesmas* charged Rp15,000 for services within normal working hours. In 2015 people have to pay Rp20,000 to the midwife for her service, and Rp15,000 to the nurse. The fee for the doctor’s service is now Rp30,000 or more, depending on the type of medicine prescribed. Poor patients who do not have a health insurance card are asked to pay Rp5,000 for a ticket when they go to the *puskesmas*.

### b) Puskesmas

The primary health facility for Nanga Tumpu villagers is Puskesmas Soriotu, which is located in Cabang Banggo, around 19 kilometers from Desa Nanga Tumpu. After the construction of the EINRIP road, access to the *puskesmas* using public transportation or private vehicle is easy; and the quality of health services has improved. More people go to the *puskesmas*, even those from outside of the health service center’s working area. Ambulances can provide a faster response because the journey from Nanga Tumpu to Cabang Banggo is now shorter; the previously hour-long trip now takes only 30 minutes. Patients do not need to pay for the ambulance pickup. If a patient wants to be driven back home using the ambulance, the patient has to pay Rp50,000 for gasoline.

The *puskesmas* operates five days a week (Monday through Friday). Emergency services are available around the clock. The *puskesmas* serves 12 villages for outpatient and inpatient care; it has 20 beds and 27 programs. At present Puskesmas Soriotu is running a childbirth campaign to achieve the target of 95% childbirths assisted by doctors or midwives. To date, traditional midwives and healers still have a role in the community. The poor and very poor seek treatment from traditional healers (*dukun*) when they are sick. The poor also rely on *dukun* to assist in childbirth. The fees for birthing services usually depend on the ability of the family to pay. However, the number of women giving birth with the assistance of a *dukun* has declined significantly compared to 2010. Based on results from the women’s group discussion, there has been an important shift in people’s awareness about giving birth at the *puskesmas* with the assistance of a midwife or doctor.

According to the Regional Regulation the fee for a normal delivery is Rp 600,000, but *puskesmas* must still accept disadvantaged families. This includes providing a free ambulance service to the *puskesmas* or hospital.

The number of staff in 2013 was 20 people; now, the staff consists of 40 civil servants, four temporary staff, and three honorary staff, along with several volunteers. This means the number has now doubled. Puskesmas Soriotu has only one doctor, a local of Dompu, along with seven intern doctors. The numbers of staff at the *puskesmas* is sufficient to provide treatment to all patients. Should there be any patients whom the health center cannot handle, they are referred to the regional public hospital in Dompu.

Puskesmas Soriotu still accepts patients covered by the Dompu Public Health Insurance Scheme (JAKKAD) and Jamkesmas (*Jaminan Kesehatan Masyarakat* –Public Health Insurance for the Poor). Since 2014, with the BPJS (*Badan Penyelenggara Jaminan Sosial* –Social Security Implementation Agency) program coming into effect and providing free medical services for BPJS members including the poor families.<sup>9</sup> So, insurance for childbirth, which in the past required the mother to submit copies of her ID card, Family Card, and Village Recommendation Letter, now requires that the mother have a health card, such as JAKKAD, Jamkesmas, Jamkesda, or BPJS Health Sector.

The *puskesmas* is at the moment expanding its services to industrial areas, such as corn processing factories and mills, furniture businesses, and transport businesses, which are growing in number. The BPJS health-sector should also cover all formal workers with the insurance premium paid collectively by the companies, but at the time of this study it was still in the data collection stage.

One problem faced by the *puskesmas* is that the number of operational vehicles—motorcycles and ambulances—is very limited. There are only two ambulance vans; one in good condition, while the other one is in disrepair. Both have been used for six to eight years and need to be replaced. Another problem is the building itself, which is deemed insufficient, especially now that the number of staff has doubled.

### c) Posyandu

The *posyandu* (*pos pelayanan terpadu* –integrated health services post) program nowadays runs smoothly, and able to serve as far as Pulau Bajo, dispensing immunizations and vaccinations. As part of the implementation of the universal child immunization policy (UCI), all infants must receive basic immunization. The health staff conduct sweeping to make sure that no parents forget to take their baby to the health center for BCG, polio, and measles immunization.

The *posyandu* provides services once a month. Now *puskesmas* staff makes a village visit more often. Each time *posyandu* provides health check-ups and services for toddlers and the elderly, *puskesmas* staff are present (doctor, nurses, and other staff), but it is the nurses that most often attend it.

## 2.6 Education

### 2.6.1 Kabupaten Dompu

Since 1 January 2008, the government of Kabupaten Dompu has provided free education for all students from SD (*sekolah dasar* –primary school) to SMA (*sekolah menengah atas*—senior high school). In 2008, the net enrollment rate at the primary level was 93.6%, at junior high school level

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<sup>9</sup>The central government paid the insurance premium for poor households.



was 62.4%, and at senior high school level was 56.5%. In 2010 almost all school-age children went to primary school (95.4%), while junior secondary school level was 69.4%, and at senior secondary school level was 57.7%. In 2014, the net enrollment rates increased further to 97.1% at primary school; 89.6% at junior secondary school, and 79.0% at senior secondary school (Table 12).

**Table 12. Net Enrollment Rate (NER) of Kabupaten Dompu in 2008, 2010 & 2014**

Education Level	2008			2010			2014		
	M	F	All	M	F	All	M	F	All
Primary School	93.9	93.2	93.6	95.60	95.21	95.42	97.18	97.01	97.09
SD (secular)	~	~	~	94.51	92.81	93.70	94.35	92.81	93.60
MI (Islamic)	~	~	~	1.10	2.40	1.72	2.82	4.19	3.49
Junior High	56.9	69.6	62.4	72.53	65.82	69.41	85.19	93.42	89.17
SMP (secular)	~	~	~	63.74	60.76	62.35	76.54	92.11	84.08
MTs (Islamic)	~	~	~	8.79	5.06	7.06	8.64	1.32	5.10
Senior High	69.5	43.9	56.5	63.51	53.19	57.74	76.56	81.67	79.03
SMA (secular)	~	~	~	63.51	53.19	41.07	76.56	81.67	64.52
MA (Islamic)	~	~	~	4.05	4.26	4.17	1.56	6.67	4.03
SMK (vocational)	~	~	~	12.16	12.77	12.50	14.06	6.67	10.48

Source: Susenas 2008, 2010 & 2014 (calculated by SMERU)

~: not available

One school principal said that after the road has been improved, students are more interested in studying and arrive at school earlier. In the past, some children would be reluctant to continue their education, whereas now more children continue to a higher level of education. The impact is that the percentage of students who graduated from this school has now reached 100%.

The school participation of female student increased more steeply than that of male students, especially at junior and senior high school levels. The boys attending junior high school in 2010 was 72.5% and in 2014 it increased to 85.2%, whereas for girls the percentage increased from 65.5% to 93.4%. At the senior high school level, the trend is similar. For male students, in 2010 the percentage was 63.5% and in 2014 it increased to 76.6%, but for female students, the percentage increased from 53.2% to 81.7%.

One of the respondent believed that in 2008 boys got higher priority to continue their education. Although a lot of parents could afford to pay for their children's transport to school, they were afraid to let their daughters travel too far from home as many parts of the road were in bad condition. As a result, many girls did not continue to junior and senior high schools, and ended up helping their parents at home before they got married.

Nowadays, however, as the road is in good condition, parents give the same opportunities to their sons and daughters to study. Many go to school by riding a motorcycle, which is to some degree is a result of the combined impact of the success of the PIJAR program and its associated economic outcomes and better road condition that improved physical accessibility to schools. In the end, it is the female students that showed more advancement so that their level of participation became higher than that of the male students.

## 2.6.2 Desa Nanga Tumpu

Education facilities in Nanga Tumpu comprise of four primary schools—three public (SD) and one Islamic (MI) primary schools, and two junior high schools—one public (SMP) and one Islamic (MT), which has not changed over the course of this study (2008–2015). There is no senior high school in the village. The nearest vocational high school (SMK) is in Desa Kwangko, located 10 kilometers from Desa Nanga Tumpu; whereas the nearest senior high school (SMA) is in Cabang Banggo, 19 kilometers from the village.

In the past, transport was a problem because to send children to senior high level, parents have to spend Rp20,000 per day for the return trip. This caused some parents of senior high school students let their children stay with their relatives or friends in Dompu or in Cabang Banggo. Since the road condition has been improved, many students go to school riding their own motorcycle or use public transportation which costs them only Rp10,000 per day (two-way trip). Today, almost all children go to school directly from their home, rather than stay in lodgement closer to the school.

In 2013 the school time table changed so that the SMP 4 Desa Soriutu started 15 minutes earlier, at 07:15. In 2015 the new school principal returned it to 07:30. The improved road condition somehow has caused students to become less interested in enrolling at SMP 4; so that the number of students has declined—from 70 to 80 students in the past to 50 students in 2013 and 33 students in 2014. However, the decreasing number of students is not because school-age students lose interest in continuing their education; it is because students opt for attending another junior high school—SMP 1—which is favored over SMP 4, and are able to ride their motorcycles to SMP 1 as the road condition is now improved.

The 2008 baseline study revealed that attrition among male students happened mainly because they had to help their parents to work the field or raise cattle. As the location of the field is usually far from their house, they faced problems attending school and helping their parents at the same time. In the 2013 study, teacher respondents noticed that there was an increasing awareness among parents regarding education. Usually, during the harvest season, only children from poor families assist in the field. The 2015 study reveals that the interest of the children in attending school has been increasing further because since the road condition is improved, going to school is not a hassle. Many school students ride their own motorcycle. In the past, to solve the transport problem some schools organized the rent of *cidomo/delman/benhur*<sup>10</sup> to pick up the students using School Operational Assistance (BOS) funds. Nowadays, they do not need this kind of arrangement any more.

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<sup>10</sup>A horse drawn carriage, usually used by local people for transporting passengers or agricultural produce.

## III. KABUPATEN SUMBAWA

### 3.1 General Description of the area

#### 3.1.1 Kabupaten Sumbawa

Kabupaten Sumbawa is located at the west corner of Sumbawa Island, at longitude of 116° 42'–118° 22' east and latitude of 8° 08'–9° 05' south, at an altitude of 100–500 meters above sea level. It is bordered to the north with the Flores Sea, to the east with Kabupaten Dompu, to the south with the Indian Ocean, and to the west with Kabupaten Sumbawa and the Alas Strait. Kabupaten Sumbawa's topography is uneven and hilly. The total area of Kabupaten Sumbawa is 6,643.98 sq. km.

From 2009 to 2014, Kabupaten Sumbawa was still divided into 24 *kecamatan*. There was an increase in the number of *dusun* from 578 to 632, while the number of villages decreased from 158 to 157; in addition to 8 *kelurahan* (BPS Kabupaten Sumbawa 2015a & 2010).

In 2009 Sumbawa's population was around 420,750 and it increased to 436, 599 in 2014. The lack of employment opportunities caused many local people to seek employment elsewhere and become migrant workers in the Middle East. In 2009, there were 7,234 migrant workers overseas but it decreased to 3,702 in 2014. The education level of the majority of migrant workers that worked in the Middle East during 2009–2012 was primary school graduates (BPS Kabupaten Sumbawa 2010, 2011a, 2012a & 2013a). In 2013, the proportion of migrant workers with junior high school background increased (BPS Kabupaten Sumbawa 2014); and in 2014, 46.17% of migrant workers graduated from senior high school, and 14.83% graduated from Diploma III-level (BPS Kabupaten Sumbawa 2015a: 42).

The population density of Kabupaten Sumbawa remains sparse. From 2009 to 2014, the density only slightly increased from 63 people per km<sup>2</sup> to 66 people per km<sup>2</sup>. Because of this low population density, every year this district receives transmigration. Until 2013, there were eight transmigration areas: Tolo'oi, Prode SP 1, Prode SP 2, Prode SP 3, Sampar Goal I, Sampar Goal II, UPT Buin Batu and UPT Brang Lamar. In 2014, the number of transmigrants entering Kabupaten Sumbawa was 7,083 people, who belong to 1,565 households (BPS Kabupaten Sumbawa 2010, 2013a & 2015a).

The 2015 social research focused on two road sections: (i) the Road ENB-01 AB, which is known as the Jalan Sumbawa Bypass—this section goes through Kecamatan Labuhan Badas and Kecamatan Unter Iwes where most communities live from farming; and (ii) the ENB-01 C road that goes through Kecamatan Lape, Kecamatan Maronge, and Kecamatan Plampang, which are also mostly comprised of farming communities.

#### 3.1.2 Desa Maronge

Desa Maronge is the sample village that was visited in 2011 as well as the 2015 studies. In the 2011 study, researchers interviewed vendors who worked in the Desa Maronge soccer field, the Head of the Maronge *puskesmas* and the Vice Principal of Sekolah SMPN 01 Maronge.

Desa Maronge is situated halfway along ENB-01 C in Kecamatan Maronge. The Maronge villagers used to shop at Langam Market, which is located in Kecamatan Lopok (to the west). Other options for shopping and banking are located in Kecamatan Plampang (to the east). At the northern side

the village shares a boundary with Desa Simu, the south border is shared with Desa Rodang and the eastern border meets Desa Brang Kolong.

Over the period of 2010–2015, the number of villages in Kecamatan Maronge remained four. Meanwhile, the number of *dusun* increased from 13 to 19. The additional *dusun* are all located in Desa Maronge, which had grown from 3 *dusun* (in 2010) to 9 in 2012. In general, Desa Maronge consists of residential areas, rice fields, plantations, and community forests. The distance from Desa Maronge to the Kabupaten Sumbawa capital is 43km.

Prior to 2003, Kecamatan Maronge was part of Kecamatan Plampang. In 2006, Desa Maronge was split into two villages, Desa Maronge and Desa Labuhan Sangoro. The total area of Desa Maronge is now around 87.74 km<sup>2</sup>.

The people of Kecamatan Maronge come from different regions and are multi-ethnic. Some are locals from Sumbawa; some are from Lombok, Bima, Java, Madura, and Bali. From 2011 to 2014, the total population of the village only increased by around 127 people.

**Table 13. Population of Desa Maronge**

Year	Population	Male	Female	Households
2011	4,254	2,206	2,048	1,078
2012	4,286	2,224	2,062	1,091
2013	4,319	2,238	2,081	1,102
2014	4,381	2,270	2,111	1,120

Source: BPS Kabupaten Sumbawa 2012b, 2013c, 2014b, & 2015e

## 3.2 The Economy and Land Use

### 3.2.1 District Economy

The 2010–2014 GRDP of Kabupaten Sumbawa, which is based on the 2010 constant price,<sup>11</sup> show that the district’s economic growth reached its highest point in 2011 (6.97%) and slowed down in 2012 and 2013 (6.45%); but then increased again in 2014 (6.66%) (Table 14).

Similar to Kabupaten Dompu, the agriculture, forestry, and fisheries sector are the largest components of the GRDP of Kabupaten Sumbawa’s economic growth. Besides the agricultural, forestry, and fisheries sector, there are two other sectors (out of 17 sectors) which largely contribute to the GRDP: (i) The small and large trade sectors (car and motor cycle repair shops), and (ii) construction.

<sup>11</sup>The purpose of calculating based on constant price is to eliminate the influence of price fluctuations so that the growth of real production of products and services can be determined. The index is based on 2010 prices.

**Table 14. GRDP of Kabupaten Sumbawa, 2010-2014**

Year	GRDP (Current Price) (Rp billion)	GRDP (Constant Price) Year 2010 (Rp billion)	Growth Rate of GRDP (% p.a.)	
			Current Price	Constant Price
2010	6,176	6,176	-	-
2011	6,806	6,606	10.20	6.97
2012	7,410	7,047	8.88	6.67
2013*	8,052	7,501	8.66	6.45
2014**	9,129	8,001	13.38	6.66

\*Preliminary figure

\*\*Very preliminary figure

Source: BPS Kabupaten Sumbawa (2015g)

In terms of sectoral GRDP growth between 2010 and 2014, economic growth took place in Kabupaten Sumbawa in the service sectors, as in Kabupaten Dompu. In Kabupaten Sumbawa, the highest level of growth was in the financial services and insurance sector (52%), followed by information and communications (49%), large-scale retail and wholesale: car and motorcycle repair (40%), and education services (34%) (see Table 15).

**Table 15. GRDP Growth Based on 2010 Constant Price, for the 5 Largest Sectors, Kabupaten Sumbawa.\***

No	Sector	2010 (Rp Million)	2014 (Rp Million)	Growth 2010/2014 (%)
1	Financial services and insurance	178,362	270,538	52%
2	Information and communications	77,410	115,189	49%
3	Large-scale retail and wholesale: car and motorcycle repair	848,906	1,189,137	40%
4	Education services	276,458	370,829	34%
5	Other services	103,945	137,748	33%

\*Excluding gas and oil industries

According to data from the BPS Kabupaten Sumbawa, corn production increased by 400% over 2010–2014, and the harvesting area increased by 196% from 14,528 ha in 2010 to 43,043 ha in 2014 (Table 16). Even though there has been an increase in corn production in Kabupaten Sumbawa, the five subdistricts covered in this study still rely on rice farming. A respondent stated that not all farmers could successfully grow corn because there was not enough water, and the pesticides are expensive.

Farmers do not directly benefit from the rice and corn warehouses, which are in fact more beneficial to the intermediary traders doing business in the village. One of the disadvantages of growing corn is the unstable selling price. It once went down to Rp1,900 per kilogram. It was caused by the fact that warehouse or corn-drying facilities have limited storage capacity. Furthermore, at the moment, Bulog (*Badan Urusan Logistik* -State Logistics Body) does not have a corn storage facility. Bulog focuses only on rice.

**Table 16. Corn and Rice Production in Kabupaten Sumbawa**

Year	Corn			Rice (wet paddy and dry paddy)		
	Harvest Area (Ha)	Average Production (quintal/ha)	Total Production (ton)	Harvest Area (Ha)	Average Production (quintal/ha)	Total Production (ton)
2008	16,047	32.74	52,530	68,654	48.43	332,515
2009	27,199	37.24	100,840	76,471	49.61	383,649
2010	14,528	39.53	57,425	73,359	46.00	337,417
2011	26,065	50.86	132,554	79,270	49.32	390,940
2012	35,324	54.60	192,391	86,024	48.65	418,489
2013	38,174	57.23	218,466	90,745	52.65	477,777
2014	43,043	66.74	287,258	87,531	51.32	449,223

Source: BPS Kabupaten Sumbawa (2012a & 2015a)

The numbers of cattle increased by 37.2% in the five years from 2010 to 2014 (Table 17). However, the number of bulls, horses, and goats declined. Kabupaten Sumbawa BPS office stated that the trend fluctuates. There was an extreme increase in the number of purebred (*broiler*) chickens in Kecamatan Labuhan Badas, from 45,000 in 2013 to 707,152 in 2014.

**Table 17. Numbers of Livestock in Kabupaten Sumbawa (2010-2014)**

Year	Cattle	Buffaloes	Horses	Goats	Pigs	Free range Chickens	Purebred Chickens	Ducks
2010	154,258	54,535	37,436	38,462	5,580	607,700	192,118	7,539
2011	164,505	55,706	38,505	39,396	6,159	652,733	287,346	10,203
2012	193,907	54,022	39,660	38,368	7,764	678,451	332,800	11,693
2013	206,923	50,875	38,282	35,002	7,972	691,578	328,450	10,805
2014	211,677	49,757	36,451	36,589	8,491	668,437	1,045,652	11,779

Source: The Office of Animal Husbandry of Sumbawa District (BPS Kabupaten Sumbawa 2012a & 2015a)

There are nine seaweed companies in Kabupaten Sumbawa. Over the last 5 years, following their participation in the PIJAR program, many seaweed farmers have become able to manage their own farm and business. Seaweed farming areas are being developed in the East, North, and West regions, over a potential total area of 14,950 hectares. Seaweed farming area increases up to 63%; it went up from 5,940 hectares in 2010 to 9,710 hectares in 2014. Total production rose 730%, from 43,935 tonnes to 364,919 tonnes (BPS Kabupaten Sumbawa, 2011a & 2015a).

### 3.2.2 Subdistrict Economies

During the last five years, the economic developments in the five subdistricts covered in this study vary. Subdistrict officials of Kecamatan Labuhan Badas feel that during the last five years, the development of this region has continuously lag behind other subdistricts. The reason behind this is that there is a lot of uncultivated land. Furthermore, there are only two or three large-scale

industrial establishments. Meanwhile, small-scale and home industries increased from 204 to 287 during 2010–2013. Rice field area decreased from 511 ha—with a total production of 2,445 tonnes in 2010— to 270 ha, with a total production of 1,445 tonnes in 2014. Corn production, on the other hand, increased significantly from 2,841 tonnes in 2010 to 3,851 tonnes in 2014 (BPS Kabupaten Sumbawa 2011b; 2015b).

In contrast, officials of Kecamatan Unter Iwes feel that the economy of this subdistrict had grown significantly during the last five years. This is evident in the growth of many new businesses, such as warehouses that store harvests, motorbike dealers, a “Pocari Sweat” warehouse, bottled water companies, and the construction of an *Alfamart* mini market is currently being explored. In addition, new residential properties are emerging. A private university— Samawa University— was established in 2012 and it marked a significant educational progress in this region (BPS Kabupaten Sumbawa 2013b). The number of business establishment increased from 233 in 2010 to 254 in 2014. The corn cultivation area increased from 236 ha in 2010 to 300 ha in 2014.<sup>12</sup> Meanwhile, rice field areas decreased from 2,220 ha—with total production of 11, 541 tonnes— in 2010 to 2,000 ha, with total production of 10,637 tonnes in 2014 (BPS Kabupaten Sumbawa 2011c & 2015c).

Meanwhile the people of Kecamatan Lape have continued to rely on farming as their main livelihood. Rice field area increased from 4,539 ha in 2010 to 5,175 ha in 2014. Total area used for corn cultivation increased from 163 ha (with a total production of 452 tonnes) in 2010 to 227 ha (with a total production of 1,112 tonnes) in 2014. There was also an increase in the number of business establishments, from 138 in 2010 to 145 in 2014 (BPS Kabupaten Sumbawa 2011d; 2015d).

The main livelihood of the people of Kecamatan Maronge has remained the same over the last five years; they are still predominantly wet-land rice farmers. Rice field area increased from 2,389 ha in 2010 to 2,889 ha in 2014. There is no data available on areas for corn cultivation or the industrial sector because this subdistrict is not a corn farming area and there is no permanent business establishment. There are some seasonal bricks, gravel, sand, and river stones mining as well as some small and microbusiness that sell food/drinks, rice mills, and wood/bamboo/rattan but the locations tend to change overtime (BPS Kabupaten Sumbawa 2011e; 2015e).

Wet-land rice farming is also the main livelihood of the people of Kecamatan Plampang. In the last five years, rice field area increased from 5,480 ha in 2010 to 5,770 ha in 2014. There is no data available on corn cultivation. In the industrial sector, there was a slight increase in the number of business establishments from 102 in 2010 to 109 in 2014 (BPS Kabupaten Sumbawa 2011f; 2015f).

### 3.2.3 Land Use and Infrastructure Development

Kabupaten Sumbawa secured two locations for the EINRIP road rehabilitation program. The first one is Jalan Sumbawa bypass (ENB-01 AB) designated for trucks and intercity buses; the road is intended to ease the traffic within Sumbawa Besar. The other one is Km 70 (ENB IV – km 70), both of which are the main axis roads for traffic on Sumbawa Island (Bima – Dompu – Sumbawa – Lombok – Bali – Jawa).

#### a) Land Use

In conjunction with the construction of EINRIP roads, the government of Kabupaten Sumbawa issued Regional Government Regulation (Perda) No. 10/2012 on RTRW (Regional Spatial Plan) of

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<sup>12</sup>Data for the total production of corn in 2010 and 2014 in Kecamatan Unter Iwes is not available.



Kabupaten Sumbawa for the Period of 2011–2031. This regulation governs the spatial plan for the development and expansion of various areas, including areas used for food crops and horticultural farming; animal husbandry, marine and fishery activities, and small islands; industry; agribusiness and tourism; mining; plantation areas; and regional and urban growth centers (Article 4).

One of the eight villages in Kecamatan Unter Iwes which is the poorest in the area, Desa Kerekeh, is set for submersion to make way for the construction of Kerekeh Dam. The dam is projected to be able to contain 50 million kiloliters of water.

The completion of EINRIP road along the Sumbawa bypass Km 0– Km 4 has been followed by fast economic growth. New buildings have been developed, including a high school building; a Mitsubishi car dealership; regional Water Company; restaurants; a major food distributor; government offices (the office of religious affairs, forestry office, Sumbawa Hospital, Regional House of Representatives building), a university campus, and an industrial estate. Kecamatan Unter Iwes has grown to be the center for building materials including roof tiles, red bricks, gravel and sand. The subdistrict has become the center for education for the Sumbawa area and also hosting the development of a water park recreational area.

The fact that the business and education facilities are developed in the same area raise a concern over the potential conflicting of zoning. There should be better spatial planning so that the business zone is separated from education facilities.

### 3.3 Livelihoods and Welfare

#### 3.3.1 District Social Welfare

##### a) Human Development Index

The general welfare of the population of Kabupaten Sumbawa has generally improved, as reflected by the increase in its Human Development Index (HDI) during 2010–2013 (Table 18). The 2010–2013 Kabupaten Sumbawa HDI is in the upper-middle category ( $66 < \text{HDI} < 80$ ), above the HDI score of West Nusa Tenggara Province, but below the national HDI score. Kabupaten Sumbawa government must address the challenge of balancing economic development and education and health service quality improvement (Bappenas 2014: 6).

**Table 18. Kabupaten Sumbawa’s HDI (2010–2013)**

Year	Life Expectancy (years)	Literacy Rate (%)	Mean Years of Schooling	Expenditure per Capita (Rp)	Score	Provincial Score	National Score
2010	60.7	89.8	7.2	631.7	66.1	65.2	72.3
2011	60.8	90.9	7.4	634.4	66.7	66.2	72.8
2012	60.9	90.9	7.6	638.0	67.2	66.9	73.4
2013	61.4	92.1	7.7	641.7	68.1	67.7	73.8

Source: BPS Kabupaten Sumbawa 2012c, 2013d, 2014c

Note: The HDI is calculated using the standard method prior to 2014 (old method)



## b) Poverty and Income Distribution

Poverty rate dropped from 25.3 in 2008 to 17.0 in 2013 (Table 19). The Poverty Gap Index (P1<sup>13</sup>) and the Poverty Severity Index (P2<sup>14</sup>) has also decreased since 2008. This shows that, in general, the condition of the poor has improved in comparison with previous years.

**Table 19. Poverty Rate for Kabupaten Sumbawa**

Year	Poor Population (000)	Proportion of Poor (%)	P1 (Poverty Gap Index)	P2 (Poverty Severity Index)	Poverty Line <sup>15</sup> (Rp/Capita/Mon)
2008	109.6	25.3	6.5	2.2	176,586
2009	105.0	23.9	4.6	1.4	203,436
2010	90.5	21.7	4.5	1.3	221,935
2011	83.4	19.8	4.4	1.4	233,479
2012	77.1	18.3	3.9	1.2	246,097
2013*	73.8	17.0	2.5	0.6	259,474

Source: BPS 2009, 2010, 2011, 2012, 2013 & 2014

\*Calculated using Susenas Modul

However, official data shows that there has been an increase in the income gap between the rich and the poor (Table 20). The Gini ratio for Kabupaten Sumbawa increased from 0.32 (2010) to 0.36 (2014). In 3 years of the 2010–2014 period, the Gini ratio of Kabupaten Sumbawa was higher than the national rural average. However, as with Kabupaten Dompu, these figures mask several years of fluctuation.

**Table 20. Gini Ratio for Sumbawa District 2010–2014**

Year	Gini Ratio			
	Sumbawa District	West Nusa Tenggara Province	Indonesia (Rural)	Indonesia (Urban+Rural)
2010	0.32	0.40	0.32	0.38
2011	0.36	0.36	0.34	0.41
2012	0.40	0.35	0.33	0.41
2013	0.32	0.36	0.32	0.41
2014	0.36	0.38	0.32	0.41

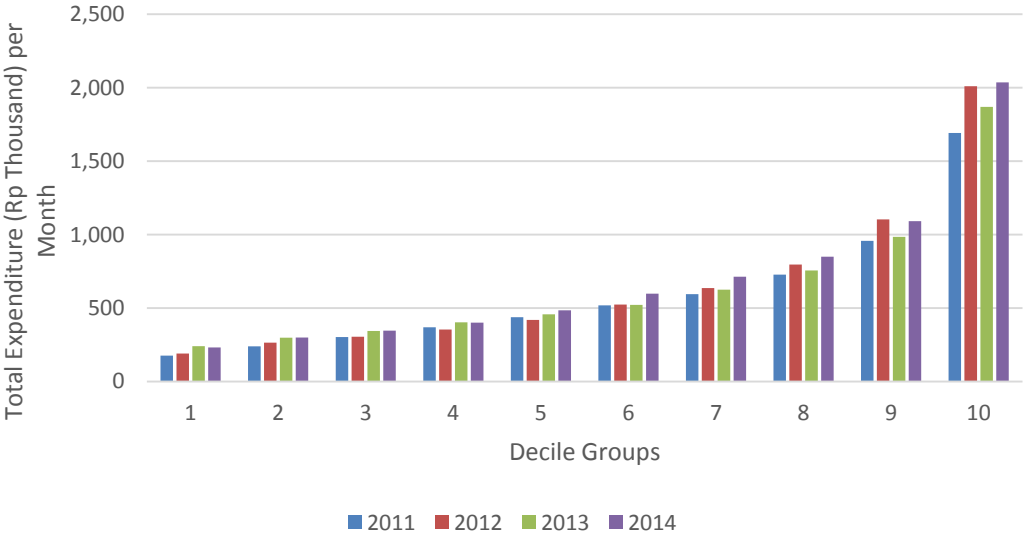
Source: Susenas 2010–2014 and BPS 2015

<sup>13</sup>P1 is the average rate of expenditure gap of each poor resident against the poverty line, the higher the index, the farther the average expenditure rate of the poor will be from the poverty line.

<sup>14</sup>P2 indicates the distribution of expenditure among the poor. The higher the index score, the higher the expenditure gap among the poor.

<sup>15</sup>The poverty line is the sum of the food poverty line and the non-food poverty line. Those who have an average expenditure rate per capita per month below the poverty line are categorized as poor.

If the community of Sumbawa is divided according to expenditure over the 2011–2014 period, there is an observable increase in the purchasing power for deciles 1 through 10. The total monthly expenditure of a person from the poorest group (decile 1) increased by 31%, while a person from the top decile (the wealthiest group) experienced a 20% increase (see Figure 3). The smallest increase was experienced by people in decile 4, whose expenditure increased by 8%. In general, all groups experienced an improvement to their welfare, although the gap in expenditure of the wealthiest and poorest groups remains wide.



**Figure 6. Total Expenditure per Capita per Month Kabupaten Sumbawa 2011–2014**  
 Source: Susenas 2011–2014 (calculated by SMERU)

The income gap can also be seen from livestock ownership. Only very few rich people own hundreds of cows or bulls. These rich livestock owners hire a herder. Most people only have one or two cows, bulls, horses, or goats.

**3.3.2 The Livelihoods of Desa Maronge Villagers**

**a) General**

Since 2012, Desa Maronge has been divided into 9 *dusun*: Dusun Batu Nyonyong, Dusun Puncak Mengas, Dusun Tiwu Sarungan, Dusun Kembang Sejati, Dusun Maronge, Dusun Unter Sari, Dusun Unter Ban, Dusun Santri, and Dusun Unter Telang. The most prosperous *dusun* is Dusun Unter Sari where the majority of the people farm and raise cattle. The farthest *dusun* is Dusun Unter Telang.

The village has a village-owned enterprise (BUMDes) that provides microfinance services to all villagers. It operates based on two credit systems: SUTA (Sistem Usaha Pertanian /Farming Venture System) for farming, and UEP (Usaha Ekonomi Produktif/ Productive Economic Activities) which provides capital for fish or cake peddlers and small-scale businesses.

About 70% of villagers already have access to electricity, and there is a free electricity program for poor villagers. In 2015, there were 540 households (from a total of 1,120) receiving Raskin assistance.

## **b) Farming**

Most Desa Maronge villagers own agricultural land which they use to grow rice. The rich have between 3 ha and 4 ha of agricultural land. The rice field is usually planted once or twice per year, interspersed with mung bean. Meanwhile, the land owned by the middle class and the poor is usually less than one hectare (between 30 *are* and 70 *are*<sup>16</sup>).

The rice harvest takes place twice a year, in April and in September. An area of 50 *are* can yield up to 25–38 sacks of rice. The people usually save several sacks for themselves. If the crop produces 38 sacks, they will sell 25 sacks, which is around two tonnes. One hundred kilograms of rice is sold for Rp420,000.

The main livelihood of the people in Desa Maronge is farming. People mostly cultivate rice, not corn because the selling price of corn has dropped significantly. The farming area is around 1,339 ha (BPS Kabupaten Sumbawa 2015e) or 16% of the total size of Desa Maronge. The farmers use technical and semi-technical irrigation systems, and a rain-fed system. The total area of rice fields increased by 30% compared to 2010, when rice field areas totalled at 1,029 ha (BPS Kabupaten Sumbawa 2011e). Irrigation water comes from Tiu Kulit Dam that supplies water for three villages: Desa Maronge, Desa Simu, and Desa Brang Kolong. There are also stream and rivers which are also used as water sources for agriculture.

Most farmers apply for a loan that is used as capital to cultivate their land. They borrow the money from the intermediary traders. The farmers need to pay with 100 kilograms of rice grain at harvest time. There is no problem obtaining fertilizers as they are distributed through the RDKK (Rencana Definitif Kebutuhan Kelompok/ Definitive Planning for Farmer's Group Needs) which consists of 38 farmer's groups.

Besides rice farming, villagers also raise livestock. The rich have about 30–40 cows and water buffalos, while the middle-class have one to two cows, water buffalos, horses, and goats. On the other hand, the poor raise farm animals such as chickens and ducks. Usually the households in the average income group sell livestock to pay their children education. The poor usually work as farm hands and obtain a wage of Rp50,000 a day. Another source of livelihood is the farming of shrimp, milkfish, and tilapia fish, along the 5 km northern shoreline.

Usually non-locals open food stalls selling fried chicken, catfish salad, chicken soup, and meatballs (*bakso*). As the competition increases, they focus on selling one item, such as *bakso*. People usually sell food between 15:30 and 23:00. There is usually not much business in the morning because most people go to the field or farm.

## **c) Migrant Workers**

One of the ways that enable low income households to move up to higher welfare level (average group) is by becoming migrant workers. Some are successful in managing their remittances productively and purchasing a rice field. Usually if they have sufficient capital, they will open a stall and sell basic needs, retail gasoline, and cigarettes at the front of their house. Most migrant workers from this village is working in the Middle East. In 2015 there were 13 women migrant workers in this village.

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<sup>16</sup>One *are* is equivalent to 100 square meters.

#### d) Impact of Road Improvement

In the past, people from other village that want to buy crops had to deal with local buyers. After the improvement of the national road, access to the rice fields has been much better. This helps farmers and crop buyers to transport crops and produce. When the road (leading to the rice fields) was still in a bad condition, farmers got a price cut between Rp5,000 and Rp10,000 per sack for transporting the produce into the main road.

After the national road was improved through both the EINRIP and APBN, people have had better access to banks and loans. These days not many people borrow money from loan sharks, thanks to banks offering loans. Bank staff, such as Bank Surya Kencana (BSK Bank) located in Kecamatan Plampang, visit clients every day. If a person borrows Rp. 5 million, they have to repay Rp5.5 million over a period of six months. Middle-class households can develop their business by borrowing money from the bank. The collateral given is their house ownership certificate. The amount of the loan is usually around Rp8 million with monthly repayments of Rp900,000 over one year.

#### 3.3.3 Community Welfare<sup>17</sup>

In general, the results of the women's FGD indicate that there are three welfare groups in Desa Maronge, namely the rich, the average, and the poor. The characteristics that differentiate these groups are housing conditions, livestock ownership, size of land owned, ownership of assets (cars, motorcycles, mobile phones, savings), livelihood, children's education attainment, access to healthcare, and lifestyle (e.g. types of cosmetics used).

As presented in Table 21, the women's group agreed that there have been changes in the distribution of people across the three welfare groups. Between 2010 and 2015, the number of the rich increased from 9% to 27%, while members of the average group rose from 40% to 57%. As for the number of the poor, it declined from 51% to 16%.

**Table 21. Welfare Group Distribution**

Year	Wealthy	Average	Poor
2015	27	57	16
2010	9	40	51

*Note:* The 2010 data is not the result of a baseline study. The researchers had asked the participants about the conditions of the previous five years.

The arrival of manganese mining investors in 2011 improved the welfare of the poor, making them moved up to the average welfare group. The poor people of Desa Maronge sold their lands in Dusun Jorok (located between Desa Maronge and Desa Labuhan Sangoro) to the manganese mining investors, and used the money to buy farmland and cultivate rice. The people use the income from rice harvests to improve their welfare.

The poor and the average welfare class have the opportunity to improve their welfare as their children become migrant workers and are able to send money. More female than male children become migrant workers. Among members of the poor group, men are more likely to go to Korea,

<sup>17</sup>The analysis presented in this section is mostly derived from focus group discussions (FGDs) with women's group and in-depth interviews.

while women are more likely to go to Saudi Arabia, Hong Kong, or Brunei Darussalam. The parents use the money to buy land and renovate their house. Children from poor families usually graduated from junior high school or senior high school.

Among the average welfare group, the boys go to Korea for work, while the girls go to Singapore. The salary received by migrant workers in the Middle East is lower than that of migrant workers in Korea and Singapore. The parents usually use the remittance to buy assets (lands, houses, and others) as a means of investment.

During 2010–2015, there have been instances of downward mobility from the wealthy welfare level to the average group, and from average to poor status. Among the reasons behind it were: (i) the failure in managing assets (e.g.: children unable to manage inheritance from parents, money being lost to gambling); (ii) a child deceiving the parents saying she or he is attending college when in fact she or he is not; and (iii) financial loss stemming from inharmonious family (parents divorcing, or committing infidelity).



**Figure 7. A women's FGD in Desa Maronge**  
(Rahmayati/SMERU, 2015)

### 3.3.4 Social Life

#### a) General

The people of Sumbawa are egalitarian in character, easily accept other people, and really respect differences, so that many people from other regions have settled in the area. This subdistrict has a slogan—“*Samawa Mampir Rungan*”, more-or-less meaning that it is hoped that all people coming to Sumbawa will bring good and sweet news to the outside world after leaving the area. With a good national road, many people from other areas have come to Sumbawa to start a business or look for a job. Its population is thus increasingly multi-ethnic, composed of the Sumbawa-originated people and newcomers from Lombok, Bima, Jawa, Madura, and Bali.

Another thing seen is the change in characteristics of this subdistrict from a rural area to an urban one, as a result of the development process. This is also reflected culturally, for example, young people have begun to change their “behavior” from a rural style to an urban one. In terms of education, the people are increasingly aware of the importance of education. Their interest in sending their children to school has been extraordinary. The head of Kabupaten Sumbawa has received an award for successfully implementing the integrated early childhood education (PAUD) program.

## b) Impact of Road Improvement

As a result of the well-surfaced condition of the road, there has appeared a “mobile market”, that is, vendors who drive a pickup truck, traveling to sell vegetables, fish, clothes, and daily needs. With this new development, people do not need to go to the market for shopping because everything is available nearby. However, many women feel that it takes them a shorter time to go to the market, where they can find all the items on their shopping lists. Previously, because of the damaged condition of the road, they considered going to Pasar Langam as a long journey. Many of them were afraid to take an *ojek* to go to the market. In this sense, the improved road conditions have increased women’s options and mobility.

People’s sense of ownership toward the road is high. They always try to keep the road nice and clean. This can be seen from their initiative to clean up the sidewalks in front of their houses. Now that the road is in good condition, they feel a higher responsibility to keep it in good condition. There is a village which even has a rule that forbids residents from pushing the iron-wheeled hand tractors along the national road, for it can damage its asphalt surface. On days of nationwide celebration, such as the National Independence Day on August 17<sup>th</sup>, usually the officers of the *kecamatan* office do community work to clean up the area around the office and the road sidewalks.

However, one thing remains a concern among the people is the cattle theft. The thieves sometimes carry guns, and have boats to carry the cattle. They steal cows that go wandering around the road. Besides taking a cow alive, sometimes they also slaughter it in the scrub, dispose of its innards, and put its body parts into a big box. Then, they run away by taking a night bus. The thieves can number as many as a dozen people.

Similar to developments in Dompu, people in Sumbawa feel that their relationship with their relatives is getting closer as now it is easier for them to visit each other. An example of this is the festivity season during which they receive many invitations from their relatives to come to ceremonies such as weddings, circumcisions, and hajj-related events.

## 3.4 Transport Sector and Services

### 3.4.1 Transport Infrastructure

#### a) Road Sector

The total length of roads in Kabupaten Sumbawa<sup>18</sup> is around 1,541 km, and 52% (799.73 km) of these are hot mix asphalt roads (see Table 22). The impact of EINRIP road improvement works on transport in the area also been influenced by complementary policies at the *kabupaten* level. To accelerate the overall *kabupaten* road improvement, the Sumbawa government issued Perda No. 2/2013 on Kabupaten Roads, which requires four percent of the local budget (APBD) to be allocated for the construction, improvement, and maintenance of *kabupaten* roads (Article 15, Paragraph 3).

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<sup>18</sup>There are four types of road: national, provincial, *kabupaten*, and village roads. To date, the Public Works Agency of Kabupaten Sumbawa does not have any data on the condition or length of village roads.

**Table 22. Condition and Length of Roads in Kabupaten Sumbawa 2011 & 2014**

Road Type	Year	Condition and Length of Roads (Km)					Total Road Length (Km)
		Good Condition	Average Condition	Somewhat Damaged	Very Damaged	Unclear	
National Road	2011	127.52	42.74	30.41	21.1	0	221.77
	2014	200.67	6.9	15.03	0	0	222.6
Provincial Road	2011	65.75	100.6	68.85	111.78	59.9	406.88
	2014	150.89	52.68	8.85	45.57	108.9	366.89
Kabupaten Road	2011	351.55	124.57	157.53	317.86	0	951.51
	2014	448.17	103.86	129.33	270.15	0	951.51
Total Road Length (Km)	2011	544.82	267.91	256.79	450.74	59.90	1,580.16
	2014	799.73	163.44	153.21	315.72	108.9	1,541

Source: BPS Kabupaten Sumbawa, 2012a & 2015a

In addition, the PNPM Mandiri program has been used to improve village roads and increase community self-reliance, which means that roads are now adequate and trucks and pick-ups can drive directly to the rice fields to collect harvested produce. Consequently, the issue of transporting produce is generally no longer a concern.

Before the EINRIP project, the quality of national roads in Kabupaten Sumbawa was poor. Only 48% (107.78km) of the national roads were classified as being in good condition, a figure which increased to 58% (127.52km) in 2011 and 90% (200.67km) in 2014. (BPS Kabupaten Sumbawa 2015a). The increase in the proportion of good quality roads is the result of improvement works funded by EINRIP (at the end of 2013) and the central government through State Budget (APBN) funding.

Following this development, there has been a plan to open a road passing through the north shore, which will connect Kecamatan Labuhan Badas, Kecamatan Sumbawa, Kecamatan Moyo Utara, Kecamatan Moyohilir all the way to Kecamatan Maronge. The road leading to the farming area is already connected to *kabupaten* roads. The roads to remote villages are also connected to *kabupaten* roads. Many people have opened stores so that the locals don't need to go to town for shopping.

A remaining issue is the need to build new roads; Kabupaten Sumbawa encompasses a vast area and only about 58% of the area has access to adequate roads. The focus for road development and improvement in the *kabupaten* is SAMOTA roads. These roads will support the tourist areas of Saleh Bay, Moyo Island, and Tambora, and also support the Land of a Million Cows (BSS – *Bumi Sejuta Sapi*) program for public herding grounds located in Dusun Limung, Kecamatan Moyo Utara.

### **The EINRIP Road**

EINRIP roads are considered to be of high quality, unlike the roads built with State Budget funds. During land acquisition, the LARAP (Land Acquisition and Re-Settlement Action Plan) study was conducted thoroughly before the construction began. If there was a house that needed to be removed, EINRIP considered various aspects, including the economic considerations. The roads that used to be 4.5 meters wide are now standardized to be 8 meters wide (6 meter carriageway plus 1 meter shoulders on each side). This is also the case for the road enlargement funded by APBN.



Although it is difficult to visually tell which sections of the national road are funded by which project (EINRIP or APBN), a few FGD participants stated that to them there is a noticeable difference in road quality when they use the road to go to Sumbawa. The road from Maronge to Lape, in particular, is of high quality (smooth and well maintained). These participants believe that the contractor appointed to improve that road section, namely Jakon, produces better-quality roads. Furthermore, they can also tell which national road sections were improved through the funding by Australia’s EINRIP program. Other participants refer to the national road simply as *Jalan Raya Sumbawa–Bima* (Sumbawa–Bima Highway) because to them—not knowing who the funding agency was—all sections of the national road are in the same good condition.

With the presence of improved road infrastructure and smoother surfaces, traffic in Sumbawa has become increasingly busy, particularly with cargo vehicles. Harvests are now very good and the community is increasingly prosperous. Many night buses and trucks, including buses from Bima and dump trucks from Java, use the road, particularly between 10pm and 11pm. In 2010, traffic jams often occurred along the roads, but this is no longer the case.

The positive effects of the EINRIP road are very much felt. The flow of truck and bus traffic has become increasingly smooth along the Sumbawa Bypass. The efficient flow of traffic also reflects the smooth economic flow from the east to the west of Indonesia.

## b) Ports

Kabupaten Sumbawa has a local port that serves as the gateway for incoming and outgoing commodities, the Badas Port. This port is located in the administrative area of Kecamatan Labuhan Badas. The commodities which are sent via this port include rice, corn, and cattle. The commodities that enter via this port include flour, corn, fertilizer, cement, timber, asphalt, petrol, and coal. Aside from Badas port, there is also Alas port—however, this site has not flourished because it has rarely been used over the last 10 years.

Trucks that transport goods to Badas port use the Subawa bypass. In 2013–2014, there was a drastic increase in the amount of dispatches through Badas port, due to an increase in corn production (See Table 23). This was facilitated by the improvements to the Sumbawa bypass and the formalization of the port as a container port at the start of 2013.<sup>19</sup> The shipping of goods can now be done using shipping containers, and take both direct domestic routes (straight to Surabaya) and international routes (to the Phillipines). One company has commenced exported corn to the Phillipines through the Badas port. The Minister of Agriculture came to Badas port in mid-2015 to witness the symbolic launch of this route.

**Table 23. Total Goods Leaving Badas Port 2010-2014**

Year	Commodity		
	Rice (tonnes)	Corn (tonnes)	Cattle
2010	116,172	28,511	2,477
2011	3,051	19,796	n.a
2012	12,935	25,268	9,798
2013	15,115	75,942	13,580
2014	25,488	73,184	10,278

Source: BPS Kabupaten Sumbawa (2011a, 2012a, 2013a, 2014a & 2015a)

<sup>19</sup>In early 2013, Badas Port was formally categorized as a container port by PT Pelabuhan Indonesia III (Persero), Bima Branch.



### c) Airports

Since 2013, Kabupaten Sumbawa has also operated its own passenger airport. The construction of the airport started seven years prior to this study. At present, three airlines operate in Sumbawa: Garuda, Trans Nusa, and Wings Air. In 2016 the runway is set to be expanded another 400 meters.

#### 3.4.2 Intercity Bus Services

The number of buses from Bima to Mataram has spiked. There are between 7 and 8 bus companies that now operate between Sumbawa and Bima, whereas previously there were between 3 and 4. Buses depart in the morning and arrive in the afternoon, while night buses arrive in the morning. This is an improvement on travel times from before road improvement works; when the road was still in poor condition, a bus could take between 1 and 2 days.

Formerly, each bus was packed with passengers; now, buses are less crowded because of the increasing numbers of options available, and because of the presence of illegal pick-up truck services. Aside from this, there are also an increasing number of 'travel' services (a kind of public transport by car). In general, buses now travel only once a day, staying overnight at the terminal and making the return journey the following day. Fares have incrementally increased for the Sumbawa-Bima journey, increasing from Rp60,000 to Rp65,000, Rp75,000, and finally Rp80,000.<sup>20</sup>

Travel times by bus are now almost the same as when the road was still in bad condition, because drivers often stop mid-journey to seek out more passengers, except for night buses which have a set schedule. In fact, without stopping mid-way, a bus that previously made the journey from Plampang to Sumbawa in two hours, can now takes less than an hour.

Along the length of the road, buses stop at eateries so that passengers can rest for a moment. There are buses from Jakarta, Malang, Bali, and other regions. The cost of a fare to Mataram is Rp150,000, while "travel" costs Rp175,000. Although "travel" is more expensive, is faster and passengers are dropped at their homes.

#### 3.4.3 Local Passenger Services

Following the road improvements, the number of motorcycles—both legally registered and illegal—has increased. *Cidomo* (horse-drawn carts) are still found, but now only on the village outskirts. Meanwhile, on the Sumbawa bypass, there are now many motorized *becak* (*bentor*/pedicab) and motorcycle taxis (*ojek*). The cost for travelling from Karang Dima village to the Labuhan Badas market is around Rp5,000.

The number of public transport vehicles has grown. The buses must compete with an illegal form of public transport which takes the form of open pick-up trucks. Now, taxis are available everywhere to take their passengers to all of the *kecamatan*. Along ENB-01 C, the communities of Kecamatan Lape and Kecamatan Maronge usually shop for daily needs at the Langam market, Kecamatan Lopok. One vendor of traditional cakes in Kecamatan Maronge said that prior to the road improvement, she had to spend money on bus fares to the market, and also spend time on the journey. Following road improvement, she does not have to travel to the market, as there are travelling vendors who sell the items she requires coming all the way to Desa Maronge. As a result,

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<sup>20</sup>It should be noted that the increase in public transport fare is also attributed to the removal of the fuel subsidy.

she feels happy that she can save the money that would have been spent on transport and make better use of her time.

### 3.4.4 Freight Transport Operations

The national road that runs through Kabupaten Sumbawa is part of the cargo and passenger route between eastern Indonesian to Java. The buses and trucks have to pass through this road to transport goods to Bali or Java. In addition, many *Fuso* trucks from Java are available, delivering basic necessities and manufacturing products for which there is demand in Sumbawa, and on the return journey they take harvest products or other commodities.

Since 2013, the road has been in good condition and Badas port has provided high-capacity container shipping. This is an important support for businesses that send the products of local harvests and cattle because they can save on transport costs.

Traffic flow has increased and the majority of vehicles on the road are cargo vehicles, many of which are headed to or from the port. Many agricultural products including rice, corn, mung beans, cashews, and coffee are transported via the national road to the Badas Port.

In the corn harvest season, the national road is busy with trucks carrying corn products. These trucks transport not only corn harvested in Kabupaten Sumbawa but also from Kabupaten Dompu. Corn is delivered to drying factories and storehouses located on both side of the national road. As a result, any trucks queue on the roadside.

Traffic also increases at the time of the onion harvest. Many residents in Kecamatan Plampang lease their land to onion farmers from Bima. Onion cultivation in the area has been going on for decades. Transport of onions is all in the direction of Bima.

### 3.4.5 Road Safety

The bypass road used to go through steep hills. The road sloped sharply and had many sharp corners. This resulted in various landslides and road accidents. Then EINRIP widened the road, and the cliffs that protruded over the road were cut off. The road surface was smoothed to be much more comfortable for commuters. As a result, there have been no road accidents of this nature. Meanwhile, the road at Pal IV Km 70 was raised and widened, making it smooth and comfortable.

Security on the road is also fine. Some incidents occur though, such as local people throwing rocks at the passenger buses. This is because the buses often overtake other cars recklessly, even when the road is full of traffic.

Generally, people have low traffic safety awareness. Many school students who drive motorcycles do not have a driver's license or do not have a license plate number on their motorcycle. They may even fail to wear a helmet and jacket.



**Figure 8. Male and female students of a junior high school in Kabupaten Sumbawa ride their motorcyrcles with two passengers and no helmet**

(Rahmayati/SMERU, 2015)

Police respondents reported that they still go to schools once a month or once every two months for public campaigns about traffic safety and the danger of drugs. However, school respondents from schools along the EINRIP road section stated that police have not come to their schools, much less provided road safety information.

There is also a noticeable decline in the number of illegal toll extractors, which makes the situation here better than in the west (Surabaya). However, the police still conduct routine checks to make sure that the vehicles do not carry timber from illegal logging or stolen livestock.

Herds of livestock can also be a nuisance sometimes; motorists must patiently wait when there are cows crossing the street. Accidents occur when the animals panic after hearing car horns.

Accidents are still frequent along the Sumbawa Bypass. Once a car crashed into a house, and there have also been cases of collisions between cars and motorcycles. Road fatalities are also quite high. Although it is called the Sumbawa Bypass, many houses line the edges of the road, and so the stretch is susceptible to traffic accidents. Another accident hotspot is the *Simpangan Bingung* roundabout, especially during the night. Accidents happen because people are reckless and break the speed limit.

The local people hope that (i) there is routine road maintenance to keep the road smooth; (ii) more road signs are added to prevent accidents; (iii) road lighting is turned on more routinely, because recently, the lights are rarely operational at night; and (iv) motorists will be more disciplined in using the road. The operation of road lighting at night would make people feel secure from the theft of livestock, large or small. Usually, animal theft happens during bad harvest months (September to March).

## 3.5 Health and health services

### 3.5.1 General

The Maronge Puskesmas provides services to the residents within Kecamatan Maronge, which consists of four villages: Desa Maronge, Desa Simu, Desa Pemasar, and Desa Labuhan Sangoro. Desa Labuhan Sangoro is categorized as a village which is difficult for health workers to reach. Since the national road improvement, some of the residents of Desa Brang Kolong have been going to the Maronge Puskesmas for medical treatment, although these villagers are supposed to go to the Plampang Puskesmas.

In 2010, the number of health workers was limited: 1 doctor, 3 nursing assistants/nurses, and 4 midwives (and four village midwives). In 2014, the number of health workers significantly increased, with the addition of 1 general practitioner, 1 dentist, 29 nursing assistants, 16 midwives (and 2 village midwives), as well as 3 more health workers (BPS Kabupaten Sumbawa 2011; 2015). In 2014, 12 integrated health posts (*pos pelayanan terpadu/posyandu*) were active.

The most common diseases, especially during the rainy season from December to January, are malaria and diarrhoea. In 2014, there were ten cases of tuberculosis. These cases were discovered by laboratory workers who were examining patients for tuberculosis. Up to now, the *puskesmas* does not have the capacity to test for HIV/AIDS and has never found any cases of sexually transmitted disease.

The number of outpatient visits has increased, from 4,331 in 2010 to 5,464 patients in 2014 (BPS Kabupaten Sumbawa 2011; 2015). Usually, people who do not have an insurance card (Askes/Jamkesmas/BPJS) are charged Rp5,000 at the *puskesmas*.

#### **Road Accidents**

When there is a traffic accident, residents will usually call the *puskesmas*. And then, the health workers will come to the scene and take the patient to the *puskesmas*. After that, the *puskesmas* will notify the police. If the patient's condition does not improve within 3–5 days, he or she will immediately be referred to the hospital. Usually, the police will accompany the patient to the hospital and monitor the patient's condition.

### 3.5.2 Community Access

In order to ensure community access to health services, health workers—such as nursing assistants or nurses, as well as midwives to assist women giving birth—are assigned to the *pustu* (secondary *puskesmas*, or *puskesmas pembantu*). Health workers are assigned to the *pustu* or *polindes* (village maternity center) at other three villages, aside from Desa Simu where Maronge Puskesmas is located. Since 2009, Maronge Puskesmas has been providing in-patient services.

There are five *posyandu* in Desa Maronge. These facilities provide services once a month, usually in the last week, on the 24<sup>th</sup> or the 25<sup>th</sup>. If a mother and/or her toddler do not visit the *posyandu*, a *posyandu* cadre will make a house call two days afterwards. The number of toddlers and expecting mothers that visits the *posyandu* is small, with the road improvement having no impact on attendance. Families are usually reluctant to go to the *posyandu* if their child has received a complete immunization package. This is unfortunate, as *posyandu* provide supplementary nutritious food (Supplementary Food Program/PMT), for example mung bean soup.

### 3.5.3 Health Education

Health workers of Maronge Puskesmas conduct public education activities related to reproductive health, the dangers of drug abuse, and the provision of iron supplements (to prevent anaemia) to junior high school and senior high school students in Kecamatan Maronge. They work with play groups, kindergartens, and primary schools, including looking after students' dental hygiene and teaching children how to brush their teeth.

The most important thing is that there is community awareness of the importance of giving birth with the assistance of a midwife and health assistant at the *puskesmas*. In 2010, mothers still gave birth with the help of a traditional midwife without formal training.

Brang Kolong public primary school collaborates with Puskesmas Plampang to look after students' physical health, for example, by providing them with chickenpox, measles and polio immunization and maintaining their dental hygiene, as well as enriching their understanding of the importance of iodized salt.

### 3.5.4 Impact of the EINRIP Road Improvement

Overall, the improvement of the national road has had the following impact on health services: (i) easier access for patients referred to the hospital, achieved through reduced travel time which allow people to reach the hospital in about one hour, (ii) health workers have become motivated to go to work due to better road conditions, and (iii) easier access to the *puskesmas/polindes/pustu* for patients. With the improved road, the numbers of victims of road accidents and ARD (acute respiratory disease) patients have declined.

## 3.6 Education

### 3.6.1 School Provision and Enrolment

There were 366 primary schools (SD), 101 junior high schools (SMP), including Islamic junior high schools (MA) 25 senior high schools (SMA), including Islamic senior high schools (MA), 17 vocational high schools (SMK), and eight private universities in Kabupaten Sumbawa in 2014. The increase in the number of schools was notable during the 2011–2014 (Table 24). These will provide adequate rooms for all school aged children. With the road completed and in good condition, students do not need to go out of Sumbawa to continue their study to senior high level or to college. Samawa University being built in the side of bypass road is at present in the process of becoming a state college.

**Table 24. Number of Schools in Kabupaten Sumbawa during 2010–2014**

Level	Number of schools			
	2011	2012	2013	2014
Primary school	354	357	362	366
Junior high school	84	91	95	101
Senior high school	22	23	27	25
Vocational high schools	12	15	16	17
Higher education college	n.a.	n.a.	n.a.	8

Source: BPS Kabupaten Sumbawa 2014

The enrollment rate for the primary level was already high: 97.97% in 2014. Meanwhile, for junior high school, in 2010 the enrollment rate had reached only 67.97%, which then jump to 81.4% in 2014. Similarly, the enrollment at senior high level also experienced significant improvement from 55.75% to 73.02%. However, the gender disaggregated data revealed that the enrollment rate of females is becoming higher than that of males, especially for junior and senior high school levels. In 2010, the enrollment rate of male students at primary school level was higher than that of female students, but in 2014 the enrollment rates of female students exceeded the male students (Table 25).

**Table 25. Net Enrollment Rate (NER) of Sumbawa District in 2010 and 2014**

Education Level	2010			2014		
	M	F	All	M	F	All
Primary School	97.35	96.30	96.81	97.56	98.47	97.97
SD (secular)	93.38	93.83	93.61	94.51	93.89	94.24
MI (Islamic)	3.97	2.47	3.19	3.05	4.58	3.73
Junior Secondary	62.86	74.14	67.97	77.61	85.48	81.40
SMP (secular)	62.86	67.24	64.84	70.15	77.42	73.64
MT (Islamic)	0.00	6.90	3.13	7.46	8.06	7.75
Senior Secondary	50.82	61.54	55.75	63.79	80.88	73.02
SMA (secular)	31.15	38.47	34.51	43.10	50.00	46.83
MA (Islamic)	3.28	7.69	5.31	3.45	11.76	7.94
SMK (vocational)	16.39	15.38	15.93	17.24	19.12	18.25

### 3.6.2 Vocational Education

The principal of the vocational high school (SMK) located on the Jalan Sumbawa bypass stated that the students hailed from almost all *kecamatan* in Kabupaten Sumbawa. Some even come from Kalimantan, Aceh, or NTT, following their parents who have moved to Sumbawa. This is because the school has been appointed as an internationally standard school or a referral/favorite school. The school has sufficient capacity, and from the maximum capacity of 1,500 students, it only has 1,000 students. Actually many students want to enroll in this school, but the Education Office has decided to limit the number of students.

The objective set for vocational high school students is that after graduating, they are able to work in related industries or start their own business. The most popular preference in this district is working for the State-Owned Electricity Company (PLN) or in the mining industry. Some have been recruited by the road or warehouse contractors. Some other continue their study. The motivation for parents is inclined towards mining program, and they encourage their children to go to engineering vocational school. They also hope that the graduates can become independent and working overseas in Korea or Japan. There is a Memorandum of Understanding signed with Korea and China, and once representatives from universities across Asia met in Jakarta in connection with the Ministerial Summit of nine Asian ministers. This establishes channel for students who want to continue their study in Korea.

The vocational school stands on more than three hectares area, so that there is ample space for car and motorcycle parking. There is a pedestrian crossing in front of the school. But, there are no traffic lights, so the school security guard helps the students cross the road.

### 3.6.3 Changing Attitudes to Education

Today, parents prioritize their children's education. During the harvest season, many students skipped school. This has ceased following the introduction of the PIJAR Program. With the help of the program, the people are more prosperous and the parents are more aware of the importance of education.

The people of Desa Maronge also have a principle that education for their children is the first priority. In 2010, for example, many children moved to Sumbawa to continue their education to senior high school level (even though there was a senior high school in Plampang). There they lived in a boarding house and only went home once in a month due to the poor road conditions. With the new national road being available, now they can go home every week.

### 3.6.4 Impact of the EINRIP Road Improvement

After the improvement of EINRIP road, the level of student attendance has improved. When the road was still in a bad condition, many students missed the first period because they arrived late because of bad road conditions. Also, today there are more extracurricular activities and the students passing rate has also improved.

After EINRIP road improvement works, nearly 80% of students travel to school by motorcycle. The impact is there are no more late arrivals to school thanks to smooth and safe roads. In the past, town and village transportation was infrequent and limited. Students who rented a room used to choose the better route so as not arrive late to school.

In 2010 many school-age students went to Sumbawa to continue to senior high school level even though there was a senior high school in Plampang. This is because they wanted to go to a more respected school. There they would rent a room. As an impact of the bad road conditions, these students went home only once a month. Now that the road is in good condition, students can go home more frequently, for example, once a week. In 2012 Kecamatan Maronge opened its senior high school, but many parents still opted to send their children to school in Sumbawa, especially after the EINRIP road was completed.



## IV. CONCLUSIONS

Since the 2013 survey in Kabupaten Dompu and the 2011 survey in Kabupaten Sumbawa, the economy of both districts has been growing and the welfare levels of the people have improved. This progress is reflected in the increase in the Human Development Index and the declining poverty rate as well as the reduction in the absolute numbers of people living below the poverty line. The declining trend of the proportion of poor households was also confirmed in both sample villages of this study—Desa Nanga Tumpu in Kabupaten Daomu, and Desa Maronge in Kabupaten Sumbawa. This progress, however, has been accompanied by increasing expenditure inequality with the proportion of expenditure of the richest group increased significantly.

Overall, the Dompu's economy grew faster than the Sumbawa's, mainly attributable to the rapid intensification of corn production resulting from the PIJAR program—a West Nusa Tenggara provincial government support program aiming to increase corn, cattle, and seaweed productions. Many people in Desa Nanga Tumpu have enjoyed rising incomes from the expansion of corn cultivation and the more open local corn market. The local economy of Desa Maronge is somewhat more stagnant since most villagers still rely heavily on rice cultivation. The improved welfare of some villagers, especially the poor and middle income groups, originates from the productive use of migrant workers' remittance and additional capital from selling infertile land to manganese mining investors. The area along the newly improved Sumbawa bypass road, in contrast, has undergone very rapid growth and is becoming urbanized with extensive development of new buildings. In addition to residential areas, the DPRD (Regional House of Representatives) office, the provincial hospital, a private university, and several private firms (including corn storage warehouse, car and motorbike dealers, and private offices) have been built along this road.

This 2015 social research survey has confirmed that the benefits of the EINRIP road improvement projects, which were observed in the 2013 survey in Kabupaten Dompu have been sustained; and that the communities alongside the road sections in Kabupaten Sumbawa also enjoy the same benefits. In particular, the EINRIP road improvements—in conjunction with improvements in other transport infrastructure including roads, seaports and airport funded by various other sources—have significantly increased accessibility and effectively facilitated economic development and better provision of public services, which resulted in the overall improvement of community welfare. Although it is difficult to disentangle the impact of each project, in all study locations, the road sections improved by EINRIP have contributed to improvements in the following areas:

### 4.1 Transport Sector

The improved road conditions have led to significant reduction in travel time and much safer journeys. A greater proportion of traffic now runs at night and the number of operators in the transport sector is increasing. Transport businesses and operators report that the costs of vehicle maintenance have fallen. However, the increasing numbers of players—including local farmers who have invested the profits from their agricultural activities in vehicles for hire and growing private motorcycle ownership—has increased the supply of transport services for passengers and freight, which has driven down rates to below the permitted maxima. The increased competition has marginalized traditional means of transport (such as *cidomo*), but has facilitated the development of trade in local agriculture products and the more efficient distribution of consumer goods.



## 4.2 Local economy and Land-Use Development

The significant saving in travel time as well as improved connectivity between agricultural areas and other economic centers and ports have supported local economic development in various ways. In the agricultural sector, the smoother delivery of agricultural inputs, more frequent visits by extension workers, combined with a more open market and establishment of new storage facilities have stimulated farmers to expand the area under cultivation, and increase production and profit.

In the trading sector, in addition to increasing numbers of passengers that stop at eateries and other roadside vendors, it is now easier for local business to get supplies since many suppliers are willing to deliver and there are also a growing number of mobile vending activities. Banking services are also provided by mobile agents that come by motorcycle and are able to make small loans and to accept deposits. Further, in Desa Nanga Tumpu and along Sumbawa bypass road, the road improvements have been followed by the development of new buildings and businesses that are opening new job opportunities and helping create a more vibrant local economy. Both in Sumbawa and Dompu, the price of land is increasing and there is some evidence that speculators are active in the land market.

## 4.3 Livelihood and Social Life

This study has uncovered the dynamic of medium-term socioeconomic development not evident from the 2013 study, whereby businesses that were adversely affected immediately after and during road constructions were coping and adjusting to the new opportunities to regain their business. The improved road conditions had stimulated the opening of new stalls, the competition became tighter; so that the original businesses had to develop new strategies such as specializing in specific types of food or undertaking new activities. The ones that did not adapt to the new situation generally went out of business. However, as transport volumes have increased, the business of many of the roadside food stalls and vendors has recovered.

In the agricultural sector, the land owners get a disproportionately bigger benefit from the increase in production and trade, and their surpluses have been invested in other (non-agricultural) business or put towards expanding their farms, which resulted in land consolidation. In the medium-term, the people in the average and poor groups also enjoyed the benefits of increased income and job opportunities, and have been able to start accumulating productive assets such as cattle or opening up farm land. There is clear evidence of the benefits of better road condition and connectivity occurring to all sectors of society, including: more and more women using motorcycles, closer family ties facilitated by more frequent family visits, more people willing to attend social events, and parents give more equal opportunities for boys and girls to pursue higher levels of education and to ride motorcycles. There is also an increasing sense of belonging of the community (especially along the Sumbawa improved road sections) expressed by community efforts to keep the national road in good condition by cleaning the grass on the side of national road, adding concrete to fill holes, and preventing puddles on the road.

## 4.4 Health and Health Services

The number of staff in health care facilities has significantly increased during the last five years, partly as a result of the road improvements. The frequency and quality of health care provision at the village levels—including village midwife, *pustu* and *posyandu*—have been improved. Better

transport to and from the formerly less accessible areas makes it easier for health authorities to recruit sufficient numbers of staff and for that staff to travel out from the health centers to the villages. Although there are no new ambulances in the *puskesmas*, the better road condition has made response to emergency request and transporting patients faster and safer than before.

## 4.5 Education

Communities and school principals reported that the improved road condition has increased children's and parents' interest in schooling. It is now easier for children to get to school and students are more punctual, even though it is partly due to illegal use of motorcycles by junior and senior high school students that are below the permitted age for driving motorcycles. The improved access and connectivity also provide more options so that students can travel to better schools further from home; the senior high school students that formerly had to stay in a relative's or friend's house can now stay with their own family, significantly increasing the enrollment of girls. In addition, students are becoming more enthusiastic to join extracurricular activities, e.g., scouting, volley ball, and handicrafts. The establishment of a university on the Sumbawa bypass road has also opened up more opportunities for local children to enroll in tertiary education.

While the impact of the EINRIP program has been generally beneficial, this social research has found some issues of concern, including:

## 4.6 Road accidents

Although road accidents are reported to have declined and are not yet seen as a serious problem, there are concerns regarding the speeding vehicles and drivers ignorant of road signs, underage junior and high school students driving motorcycle without using helmets, livestock still wandering around in the middle of the roads, lack of road signs or missing road signs, insufficient or missing streetlights, and some parts of the road that are in poor condition and need repair. Despite the large extent of under-age unsafe driving, the police do not yet provide any kind of road safety instruction to school children.

## 4.7 Theft

Road improvements are believed to make it easier for thieves to escape. Theft of cattle remains one of the major security concerns. In addition, there are also increasing cases of motorcycle thefts, although it might correlate with increasing numbers of motorcycle ownership.

## 4.8 Unintended Environmental Degradation

The success of the corn intensification program, supported by PIJAR program and better trade and transport access has led to massive land clearing of Community Forest Areas to be used for corn cultivation. This has resulted in an alarming environmental degradation in Kecamatan Manggelewa, Kilo, and the boundary between Kempo and Pekat, Bangko, and Kwangko that had experienced significant forest destruction, which has caused many wells and natural spring to dry up as well as flooding and landslides.

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