

EINRIP Monitoring & Evaluation

Post Improvement Qualitative Social Research:

Fifth Monitoring Report, South Sulawesi (Bulukumba & Sinjai) - 2016



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SMERU RESEARCH REPORT

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May 2018

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The research described in this report has been funded by the Australian Department of Foreign Affairs and Trade (DFAT). The views expressed are those of the authors and not necessarily those of the Commonwealth of Australia. The Commonwealth of Australia accepts no responsibility for any loss, damage or injury resulting from reliance on any of the information or views contained in this report.

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: Yudi Fajar M. Wahyu (The SMERU Research Institute)

ACKNOWLEDGEMENTS

The completion of this report was possible due to the support and cooperation of parties. We would like to thank DFAT EINRIP, particularly to Graham R. Gleave, for his trust in SMERU in regard to the conduct of this road monitoring and evaluation study.

Oue thanks go to the Directorate General of Road Construction and Maintenance (Bina Marga) of the Ministry of Public Works and their staff who have provided us with valuable information and data. We especially appreciate the support and help provided by community members and the regional government staff at the village, *kecamatan* (subdistrict), and *kabupaten* (district) levels who were informants and respondents for this research.

Finally, we like to express our gratitude to Statistics Indonesia, our respondent in the transportation business (*ojek*, bus and public transport drivers), chamber of commerce, private business, as well as who have welcomed us provided valuable information.

ABSTRACT

EINRIP Monitoring & Evaluation Post Improvement Qualitative Social Research: Fifth Monitoring Report Bulukumba & Sinjai – 2016

Yudi Fajar M. Wahyu, Bambang Sulaksono, Dinar Dwi Prasetyo, Widjajanti Isdijoso, and Dyan Widyaningsih

This report describes the result of the qualitative socioeconomic monitoring conducted by The SMERU Research Institute toward the EINRIP road improvement in Kabupaten Bulukumba and Kabupaten Sinjai in the South of Sulawesi. The objective of the road improvement was support socioeconomic development in the eastern Indonesian region through improvement of the 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 improved road has facilitated the growth of transport and trading sectors, followed by the growth of new business in trade, banking, manufacture, housing and property, as well as progress in the health and education sectors. The improved inter-districts connectivity also potentially enhanced economic partnership and cooperation between the districts of Sinjai, Bulukumba, Palopo, Luwu Timur, and Luwu Utara. In particular, the recent development of service and manufacturing industry in Bulukumba is helping it become a regional hub for service and manufacturing industries. On the other hand, the economy of Sinjai is still predominantly agriculture with limited development in service and trade sectors. The poverty rate and the number of poor people in the two districts has declined.

Keywords: Eastern Indonesia, impact, road improvement, socioeconomic, South Sulawesi

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LIST OF ABBREVIATIONS

AEC	<i>Masyarakat Ekonomi Asean</i>	ASEAN Economic Community
Akusi	<i>Ayan Kampung Sinjai</i>	Sinjai's Domestic Chicken
RM AKSESS	<i>Regional Management Andalan Kawasan Selatan Sulawesi Selatan</i>	Leading Regional Management South Region South Sulawesi
BAPPEDA	<i>Badan Perencana Pembangunan Daerah</i>	Regional Development Planning Agency
BPD	<i>Badan Permusyawaratan Desa</i>	Village Consultative Body
BLSM	<i>Bantuan Langsung Sementara Masyarakat</i>	Unconditional Cash Transfer
BOS	<i>Bantuan Operasional Sekolah</i>	School Operational Assistance
Bosowasi	<i>Bone, Sopeng, Wajo, Sinjai</i>	Cooperation among Kabupaten Bone, Sopeng, Wajo and Sinjai
BPS	<i>Badan Pusat Statistik</i>	Statistics Indonesia
BSM	<i>Bantuan Siswa Miskin</i>	Assistance for Poor Students
EINRIP		Eastern Indonesia National Road Improvement Project
FGD	<i>Kelompok diskusi terfokus</i>	Focus Group Discussion
GDRP		Gross Domestic Regional Product
Ha		Hectare
HDI		Human Development Index
Jamkesmas	<i>Jaminan Kesehatan Masyarakat</i>	Health Insurance for the Poor
Jamkesda	<i>Jaminan Kesehatan Daerah</i>	Regional Social Health Insurance
KIS	<i>Kartu Indonesia Sehat</i>	The Indonesia Health Card
MI	<i>Madrasah Ibtidaiyah</i>	Islamic primary school
MTs	<i>Madrasah Tsanawiyah</i>	Islamic junior high school
P1	<i>Indeks Kedalaman Kemiskinan</i>	Poverty Gap Index
P2	<i>Indeks Keparahan Kemiskinan</i>	Poverty Severity Index
Perda	<i>Peraturan Daerah</i>	Regional Government Regulation
PLN	<i>Perusahaan Listrik Negara</i>	National Electricity
PNPM	<i>Program Nasional Pemberdayaan Masyarakat</i>	National Program for Community Empowerment
PPI	<i>Pangkalan Pendaratan Ikan</i>	Fish Landing Port
Puskesmas	<i>Pusat Kesehatan Masyarakat</i>	Community Health Center
Raskin	<i>Beras untuk Rumah Tangga Miskin</i>	Rice for the Poor

RPJMD	<i>Rencana Pembangunan Jangka Menengah Daerah</i>	Mid-Term Regional Development Plans
ROSCA	<i>Arisan</i>	Revolving Savings and Credit Associations
RT	<i>Rukun Tetangga</i>	Neighborhood Unit or Sub-village Areas
SD	<i>Sekolah Dasar</i>	Primary School
SIM	<i>Surat Izin Mengemudi</i>	Driving Licence
SKTU	<i>Surat Keterangan Tempat Usaha</i>	Business Domicile Letters
SMA	<i>Sekolah Menengah Atas</i>	Senior High School
SMK	<i>Sekolah Menengah Kejuruan</i>	Senior 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
TK	<i>Taman Kanak-kanak</i>	Kindergarten
TPI	<i>Tempat Pemasaran Ikan</i>	Fish Market
UGD	<i>Unit Gawat Darurat</i>	Accident and Emergency Unit

EXECUTIVE SUMMARY

Overview of Social Research

EINRIP improved 6 roads in South Sulawesi, of which five (ESS 02 – 06) form an almost continuous stretch of 118 km from Jeneponto, through Bulukumba to Sinjai. These roads is part of the main south coast highway linking Sinjai to Makassar.

The social research focused on ESS 05, the middle section of the Bulukumba – Sinjai road. However, consideration was also given to the impacts of the improvements on the adjoining areas.

The objective of the social qualitative research work in 2016 is to make an assessment of the socio-economic outcomes and impacts of the improvement of the EINRIP project roads in Bulukumba and Sinjai. The assessment takes into account the findings of the Baseline research, which was carried out in 2009.

The research was intended to follow up on the earlier studies to establish if the benefit identified in 2009 had been sustained and whether similar benefits had been realized by the communities living alongside ESS 05 in Bulukumba to Tondong length 20 km. Specifically, the SMERU team set out to:

- Review and document current socioeconomic conditions; and
- Identify any changes in socioeconomic conditions since 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 village of which lies in the section ESS 05.

Economic Development

The economies of Kabupaten Bulukumba and Kabupaten Sinjai have developed rapidly since the Baseline study in 2009. The EINRIP road improvement for the section ESS-05: Bulukumba – Tondong has made significant contribution to this development. The improved road has facilitated the growth of transport and trading sectors, followed by the growth of new business in trade, banking, manufacture, housing and property, as well as progress in the health and education sectors. The improved inter-districts connectivity also potentially enhanced economic partnership and cooperation between the districts of Sinjai, Bulukumba, Palopo, Luwu Timur, and Luwu Utara. In particular, the recent development of service and manufacturing industry in Bulukumba is helping it become a regional hub for service and manufacturing industries. The economy of Sinjai, on the other hand, is still predominantly agriculture with limited development in service and trade sectors.

The economic development of the Bulukumba and Sinjai has been accompanied by an increase in the overall HDI as well as the progress in all of the HDI components – life expectancy, years of schooling and income. It has also been accompanied by a decline in the poverty rate and the number of poor people.

Transport Sector

The EINRIP roads are now smoother and better aligned than before. This has led to reductions in vehicle operating costs, in particular fuel consumption and replacement parts, and in journey times. Traffic volumes have increased, in part because the improved road has diverted Makassar bound traffic from Sinjai and points north from other routes.

There has been an increase in the competition in the public transport sector, though this is not thought to be related to the road improvement. Passenger volumes have fallen, partly because of the increase in motorcycle and car ownership. However, the road improvement does appear to allow the operators to provide faster and more regular services, to the benefit of the passengers.

Local economy and Land-Use Development

The smoother road traffic has led to more intermediaries and companies from outside the region coming to the villages to buy the crops directly from farmers, which led to the increase of prices at the farmer level (farm-gate price). Product quality is also better maintained because the products reach the destination faster. Particularly, in the shipment of cattle and fish products such as TTC (Tuna, Mackerel Tuna, and Skipjack Tuna) that is to be delivered to other *kabupaten* or exported via Makassar.

In addition, along the sides of the EINRIP roads in Bulukumba, lots of locally-owned businesses have appeared, mostly food stalls and mini markets. In two villages being surveyed, there are new establishment of various factories, such as cotton manufacturing, paint, and wood manufacturing factories, as well as rice drying industry supported by foreign investment.

The economic benefit of the improved road for Sinjai is less significant than Bulukumba, since there is no significant new business and investment. Nonetheless, Sinjai is now seeking to become an attractive destination for investment and has made efforts to cooperate with the surrounding *kabupaten/kota* in developing the potential of each region, particularly regarding agriculture, fisheries, plantations, animal husbandry and tourism.

Livelihood and Social Life

The community of the sample village has enjoyed positive impact of the national road improvement. After the road improvement, some shops expanded their business and many villagers bought motor cycle since the road became smoother, which led to more senior high school students as well as junior high school students now go to school by using motor cycles. Some of the wealth are coming from clove farming that enjoyed higher price due to increase competition among intermediaries. However, the numbers of local intermediaries that bought local agricultural produce declined significantly due to increasing competition from traders from outside the village came.

Despite the road improvement, welfare levels in Bulo-Bulo declined in 2015 due to the declining rice harvest as well as plantation products - such as clove, pepper, cacao, rubber, nutmeg, and mangosteen – because of the dry season and pest attack. In addition to the lower production, the price of rubber also fell.

There are more mobile traders coming to the village. Better transportation facilities are seen as enabling families to connect better, as it is easier for children who have moved into the towns to visit their parents, women's mobility has increased, as the road improvement has made the use of motorcycles easier, particularly at night.

Health and Health Services

The road improvement shortens the time needed to take a referral patient from *puskesmas* to the general hospital (RSUD) of Kabupaten Bulukumba – from a minimum of 45 minutes to only 25–30 minutes. Road improvement has also increased the number of visits by the health office of Kabupaten Bulukumba to monitor and provide guidance related to healthcare service. However, the major influence on access to healthcare service has been changes in government program that provide subsidy for medical cost – i.e. the health scheme transfer from Jamkesda (Regional Health Insurance) to BPJS Kesehatan (Healthcare and Social Security) which has smaller coverage. Nevertheless, the road improvement has facilitated wider choice of three health facility in Kecamatan Bulukumpa or go to other *kecamatan* –Rilau Ale.

Education

Improvement of the main road has made the trip to school easier for students and teachers that uses both public transport and their own vehicles. On the other hand, road improvement has had a negative impact on the safety of the students. This affects not only students who drive their own vehicles but also those who cross the streets to go to school. The bad driving behavior that develops as the road condition improved has threatened the safety of the students.

Road Safety

This social research has found that the increasing road accidents has become a major concern. In the span of 2009 and 2015, the number of road accidents in both Bulukumba and Sinjai has increased; although the severity tends to decline as reflected by decreasing proportion of fatalities and severe injury. Even though it cannot be fully associated with the EINRIP road improvement, the smoother road condition has led to more speeding and dangerous driving behavior. Other factors causing the increase in road accident are poor understanding of traffic regulations, lack of awareness to use safety gears, under-aged driving of motorcycle, lack of community's understanding of road signs and safety, minimum road lighting, and several road signs and paraphernalia that are broken and have not been repaired.

Overall Impact

Overall, this social research study supports the view that the EINRIP improvements have been beneficial to Bulukumba and Sinjai. In particular, in addition to supporting economic development, the improved road has also significantly increased accessibility and better provision of public services, which resulted in the overall improvement of community welfare.

I. INTRODUCTION

1.1 Overview of Social Research

EINRIP improved 6 roads in South Sulawesi, of which five (ESS 02 – 06) form an almost continuous stretch of 118 km from Jeneponto, through Bulukumba to Sinjai¹. These roads form part of the main south coast highway linking Sinjai to Makassar (See Figure 1 below).

The social research focused on ESS 05, the middle section of the Bulukumba – Sinjai road. However, consideration was also given to the impacts of the improvements on the adjoining areas.

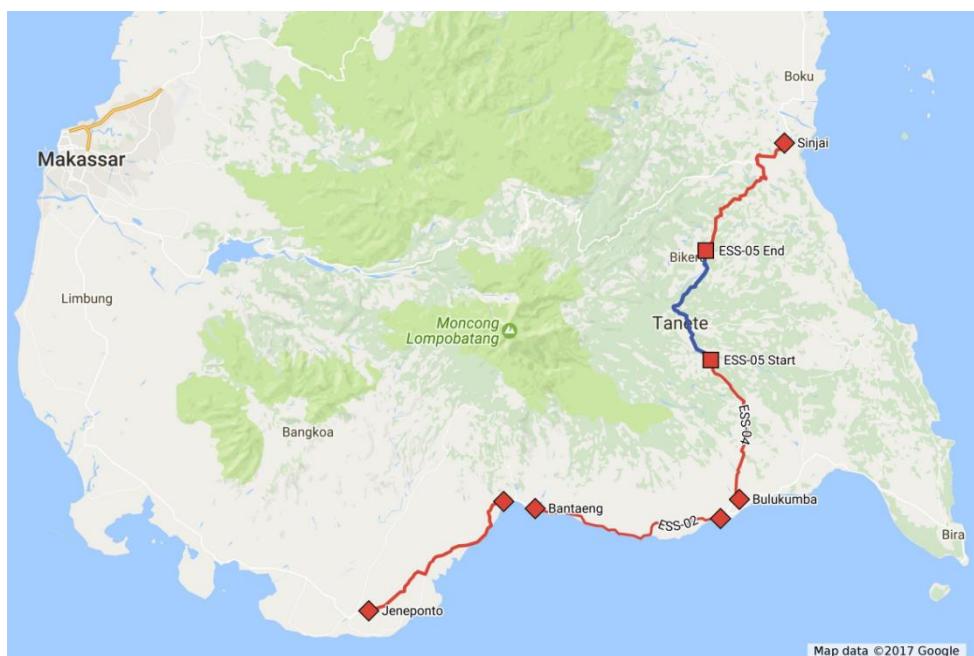


Figure 1. EINRIP roads in survey area

The objective of the social qualitative research work in 2016 is to make an assessment of the socio-economic outcomes and impacts of the improvement of the EINRIP project roads in Bulukumba and Sinjai. The assessment takes into account the findings of the Baseline research, which was carried out in 2009.

The topics explored included:

- Local social and economic welfare:
 - Provision of, and access to, social services
 - Health and road accidents
 - Economic activity, income generation and distribution
 - Changes since the Baseline Surveys
- Transport services and distribution systems:

¹ESS 01: Sengkang – Impa Impa lies well to the north of the study area and is not considered in the social research.

- Role of traders
- Transport operations
- Changes since the Baseline Surveys

Table 1. EINRIP Roads in South Sulawesi Province

Package	From	To	Kabupaten	Length (km)
ESS-01	Sengkang- Impa Impa	Tarumpakkae	Wajo	24.2
ESS-02	Bantaeng	Bulukumba	Bantaeng	26.9
ESS-03	Jeneponto	Bantaeng	Jeneponto & Bantaeng	25.8
ESS-04	Bulukumba	Tondong	Bulukumba	20.7
ESS-05	Bulukumba	Tondong	Bulukumba & Sinjai	20.0
ESS-06	Bulukumba-Tondong	Sinjai	Sinjai	24.5

1.2 Methodology

1.2.1 Survey Locations

The national road which is the focus of this research is ESS-05. However, this road must be discussed in connection with the adjoining sections (ESS-04 and ESS-06). Accordingly, although the research concentrated on Kecamatan Bulukumba (see Figure 2 below), interviews were also held (at both Baseline and in 2016) in Bulukumba and Sinjai. In particular, in following up on economic development aspects, the researchers had to add new respondents from Kecamatan Gantarang (on ESS 04), the site of a new industrial development area.

1.2.2 Data Collection Method

As in the baseline study, the social research comprised semi-structured in-depth interviews with local officials and residents in Bulukumba and Sinjai, and focus group discussions (FGDs), which were held in the village of Bulo-Bulo (See Figure 2). To the extent possible, the research team interviewed the same people or holders of the same official position as at Baseline.

As in the previous study, the FGD were conducted separately for men and women, with respondents chosen to be representative of all social groups and *dusun* (hamlets) within the village. Previous FGD participants who had passed away or moved were replaced by other respondents who represented similar welfare level, employment status, or socioeconomic impact.

1.2.3 Schedule and Research Team

The field work was conducted from 8 to 16 May 2016 in Kabupaten Bulukumba and Kabupaten Sinjai. The researchers spent eight days in Bulukumba (9–6 May 2016) to conduct in-depth interview and two FGDs. Afterwards, researchers spent 3 days (16–18 May 2016) in Sinjai. On the last day (19 May 2016), researchers confirmed their interim findings with the Bina Marga office responsible for the EINRIP roads (SNVT-PPK 09) in Kota Makassar.

Due to the limited time of research, not all respondents from the baseline study in Kabupaten Sinjai were interviewed. Interviews were only conducted at *kabupaten* agencies and at one school in Kecamatan Sinjai Selatan.

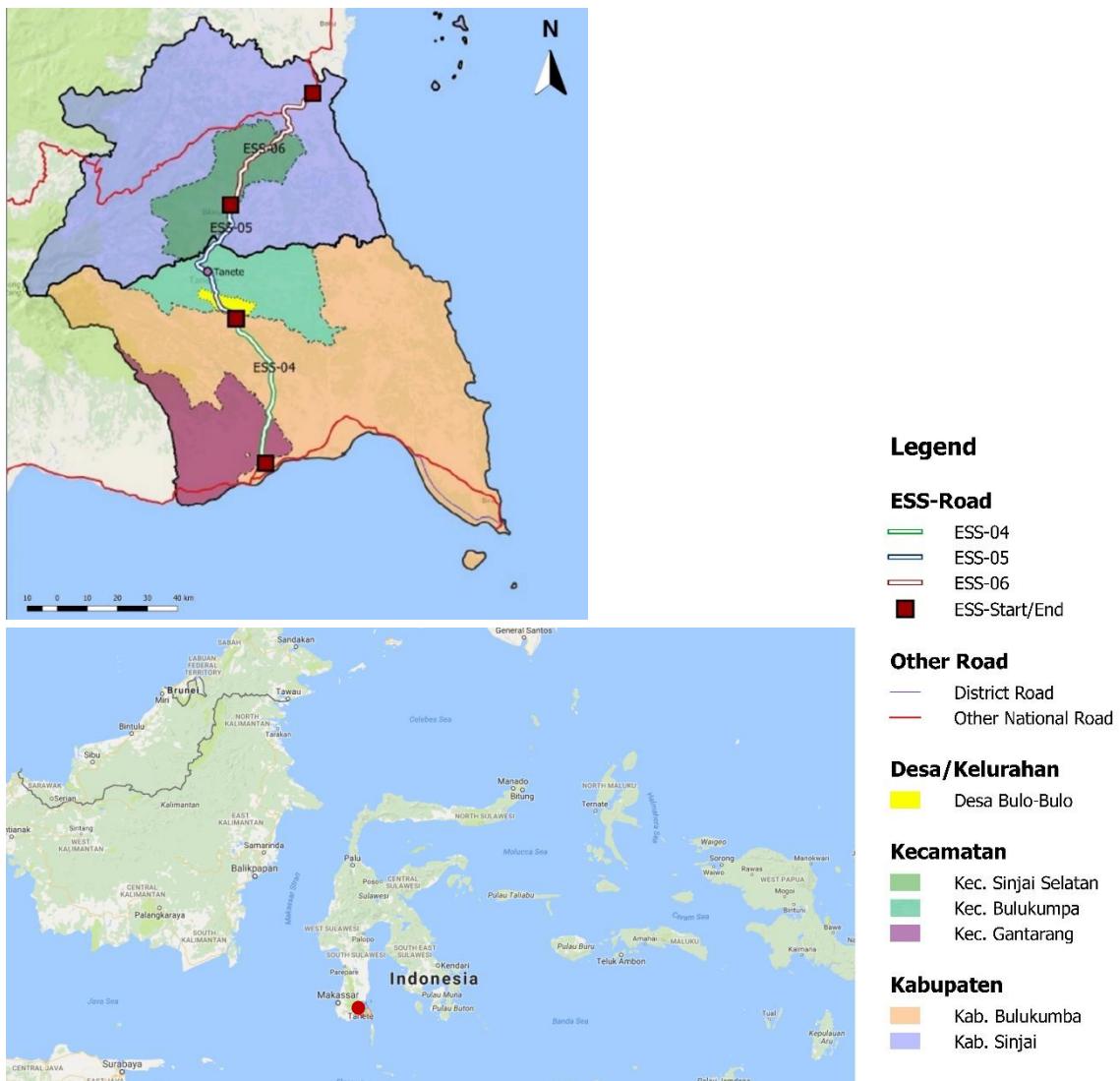


Figure 2. Survey locations

The research team consisted of four researchers and included one local researcher from Kabupaten Jeneponto and one researcher who had taken part in the 2009 Baseline study.

II. GENERAL DESCRIPTION OF THE AREA

2.1 Kabupaten Bulukumba and Kabupaten Sinjai

2.1.1 Location & Administration

a) Bulukumba

Kabupaten Bulukumba is located in the south of the South Sulawesi Province, $05^{\circ} 20' - 05^{\circ} 40'$ south latitude and $119^{\circ} 58' - 120^{\circ} 28'$ east longitude, and lies approximately 150 km away from Makassar (the capital of South Sulawesi Province). Bulukumba borders Kabupaten Sinjai to the north, Teluk Bone to the east, the Flores Sea to the south, and Kabupaten Bantaeng to the west. The *kabupaten* covers an area of 1,154 km² (BPS Bulukumba, 2016a: 4) and approximately 95 % of the Kabupaten lies between 0 and 1,000 meters above sea level.

Kabupaten Bulukumba consists of 10 *kecamatan*: Gantarang, Ujung Bulu, Ujung Loe, Bonto Bahari, Bontotiro, Herlang, Kajang, Bulukumpa, Rilau Ale, and Kindang. During the period of 2009–2014, there was an increase in the number of villages from 99 to 109 villages, and number of *dusun*, from 440 to 486. The number of *kelurahan* (villages in urban areas) remains the same, 27 (BPS Bulukumba, 2010a: 17 & BPS Bulukumba, 2015a: 18).

b) Sinjai

Kabupaten Sinjai lies between $05^{\circ}02'56'' - 05^{\circ}21'16''$ south latitude and $119^{\circ}56'30'' - 120^{\circ}25'33''$ east longitude. The distance between Makassar and Sinjai is around 223 km. To the north Kabupaten Sinjai shares a border with Kabupaten Bone, to the east lies Teluk Bone, to the south Kabupaten Bulukumba and to the west Kabupaten Gowa. Kabupaten Sinjai covers 819.96 km² of land with 55.5% of the region consisting of table lands (100-500 meters above sea level) (BPS Kab Sinjai, 2016a: 2).

Kabupaten Sinjai consists of 9 *kecamatan*: Sinjai Barat, Sinjai Borong, Sinjai Selatan, Tellu Limpoe, Sinjai Timur, Sinjai Tengah, Sinjai Utara, Bulupoddo, and Pulau Sembilan. Between 2010 and 2015 the number of villages and *kelurahan* in Kabupaten Sinjai remained the same; with 67 villages and 13 *kelurahan*, while the number of *dusun* was increased from 345 to 354 (BPS Kab Sinjai, 2016a: 29 & 2010: 30).

2.1.2 Population

In 2008, Kabupaten Bulukumba had a population of 390,543, which increased to 410,485 in 2015 (BPS Bulukumba, 2016a: 37 & BPS Bulukumba, 2009a: 45). The population of Sinjai is significantly smaller, at 238,009 in 2015

Table 2. Population (000)

<i>Kabupaten</i>	2010	2011	2012	2013	2014	2015	Growth (% pa)
Bulukumba	394.6	398.5	401.0	404.9	407.8	410.5	0.8
Sinjai	228.9	231.2	232.6	234.9	236.5	238.0	0.8

2.2 Desa Bulo-Bulo, Kabupaten Bulukumba

The village sample for this research is Desa Bulo-Bulo which is located in Kecamatan Bulukumba. Kecamatan Bulukumba is on the border between Kabupaten Bulukumba and Kabupaten Sinjai (See Figure 2) and located close to ESS 05. The number of villages in Kecamatan Bulukumba has increased from 13 (in 2009) to 14 villages (in 2012), while the number of *kelurahan* remains at three.

Bulo-Bulo village borders Kelurahan Ballasaraja to the north. On the west, the village borders Desa Bonto Bulaeng and Desa Balang Taroang. On the south it borders Kelurahan Palampang, Kecamatan Rilau Ale. On the east, it borders Desa Sallassae. There are no beaches or hills in Bulo-Bulo village which is 334 meters above sea level.

Desa Bulo-Bulo is 28 km from the capital of Kabupaten Bulukumba and 5 km from the *kecamatan* capital. According to the village 2015 data, the village population is about 3,100 which included 25 newcomers from the Makassar, Jawa, Sunda, Aceh, and Mandar ethnic group. Residents who leave or move usually go to Kalimantan, Kendari, Palu, or Makassar.

Desa Bulo-Bulo covers an area of 17.2 km². The village originally had five *dusun*: Sapabessi, Buhung Pute, Jammulolo, Samaenre, and Sabberaga. In 2012, Dusun Samaenre was split into two *dusun*, Samaenre and Palipi, because of its large population and to enable better services to be provided to the residents. Three of the *dusun* are located on ESS-05: Sapabessi, Buhung Pute, and Jammulolo.

Table 3. Population of Desa Bulo-Bulo

Year	Total	Male	Female	Households
2008	3,027	1,534	1,493	608
2009	~	~	~	~
2010	~	~	~	~
2011	3,064	1,407	1,657	619
2012	3,078	1,410	1,668	623
2013	3,107	1,430	1,677	635
2014	~	~	~	~
2015	3,106	1,428	1,678	~

Source: BPS Kab Bulukumba (2016b, 2015b, 2014, 2013, 2012, 2010b, 2009b).

III. THE ECONOMY AND LAND USE

3.1 The Economy

3.1.1 Kabupaten Bulukumba

The real gross regional domestic product (GRDP) of Kabupaten Bulukumba increased by 42% in the period 2010 -15, an annual average rate of 7.4% p.a. Growth peaked in 2012, coincidental with the beginning of work on the EINRIP Bulukumba to Sinjai roads, at nearly 10% p.a. The growth rate fell quite sharply in 2015, possibly as a result of the drought affecting agricultural output (see below).

Table 4. GRDP: Bulukumba 2010–2015

Year	GRDP (Current Price) Rp bn	GRDP (2010 Constant Price) Rp bn	Growth Rate of GDRP Based on 2010 Constant Price
2010	4,741	4,741	-
2011	5,306	5,001	5.5
2012	6,243	5,483	9.6
2013	7,187	5,909	7.8
2014*	8,386	6,414	8.5
2015**	9,584	6,777	5.7

Source: BPS Kab Bulukumba 2016c & BPS Prov Sulawesi Selatan 2016.

*) Preliminary figure

**) Very preliminary figure

The largest sector is agriculture - encompassing food crops, plantations and horticulture, fisheries, and animal husbandry – accounting for 47% of GRDP in 2010 (Table 5). Growth in the sector was modest and its share fell by four percentage points over the period to 43% of GRDP in 2015. The top food crops are rice, corn, and horticultural goods. In the plantation sector, Bulukumba has ten top commodities, clove, cacao, coconut, pepper, cashew fruit, tobacco, rubber, cotton, nutmeg, and coffee. In the marine sector, Bulukumba has sea fisheries, fish, shrimp, and seaweed farming, while in the animal husbandry sector, there are cattle, goats, broilers, and egg laying hens.

**Table 5. Five Largest Contributing Sectors to GRDP of Bulukumba
(Current Prices)**

No	Sector	2010 (%)	2011 (%)	2012 (%)	2013 (%)	2014* (%)	2015** (%)
1	Agriculture, Forestry and Fishing	47	45	45	44	45	43
2	Large-scale trading and wholesale; Car and motorcycle repair	13	14	14	14	14	15
3	Construction	8	8	9	8	8	9
4	Manufacturing	7	7	7	7	7	7
5	Government administration, Defence, and Compulsory Social Security	8	8	7	7	7	7

Source: BPS Kab Bulukumba 2016c.

*) Preliminary figure

**) Very preliminary figure

The fastest growing sector was information and communication, averaging of 16% p.a. between 2010 and 2015, followed by the water supply, waste management, and recycling sector with an average of 15% p.a. (see Table 6). According to BPS Bulukumba, the strong growth in the construction industry (7% p.a.) was partly due to the EINRIP road development.

Table 6. GRDP of Bulukumba: Real Growth Rates for Five Fastest Growing Sectors

No	Sector	2011 (%)	2012 (%)	2013 (%)	2014* (%)	2015** (%)	Average (% p.a.)
1	Information and Communication	12	14	31	15	8	16
2	Water Supply, Waste Management, and Recycling	14	23	18	18	1	15
3	Mining and Excavation	13	18	6	19	17	15
4	Company Services	10	15	15	25	6	14
5	Accommodation and Food and Beverages Supply	15	15	14	10	12	13

Source: BPS Kab Bulukumba 2016c.

*) Preliminary figure

**) Very preliminary figure

a) Agricultural Prices and Production

The plantation crop yields data (Table 7) shows the emergence of nutmeg and cashew production in the 2010–2015 period. Given the drought condition in 2015, it is likely that production was even lower in 2015 for coconut, clove, and cashew. However, the worst impact of the drought occurred in 2011 (BNPB 2016), when all plantation production declined. Although data of rubber production at the *kabupaten* level showed an increase in 2015, there was no increase in the research location, Desa Bulo-Bulo, where people's incomes were reduced due to the fall in the price of rubber (Table 8), a flow on effect from the international market where the price fell. Cacao became a leading commodity at the *kabupaten* level because its selling price is stable and because it can be harvested twice a year. Cacao can be sold raw or in fermented form. The price of fermented cacao is Rp 3,000-Rp 4,000 (per kg) higher than raw cacao.

Table 7. Plantation Crop Yields in Bulukumba, 2010–2015

Year	Rubber (Ton)	Coconut (Ton)	Clove (Ton)	Coffee (Ton)	Pepper (Ton)	Nutmeg* (Ton)	Cacao (Ton)	Cashew** (Ton)	Others (Ton)
2010	n.a	2,104.7	3,401.4	4,127	1,408.9	n.a	4,528	n.a	1,594.3
2011	n.a	217.4	17.1	206.9	44.8	n.a	602.5	n.a	40.6
2012	1,214.4	2,383	857.9	2,766.4	240.7	25.2	6,101.7	n.a	263.1
2013	1,354	2,342	719	1,058	234	27	5,188	219	n.a
2014	1,933	3,692	1,363	1,601	257	276	4,881	228	n.a
2015	2,264.4	2,495.4	738.2	1,630.7	n.a	n.a	4,984.7	225.9	363.3

Source: BPS Kab Bulukumba 2011a, 2012a, 2013a, 2014a, 2015a, & 2016a.

Note: * : Nutmeg production emerged in 2012

**: Cashew production emerged in 2013

Table 8. Market Price of Plantation Commodities in Bulukumba, 2011–2015 (Rp/kg)

Year	Robusta Coffee	Arabica Coffee	Cloves	Black Pepper	White Pepper	Raw Cacao	Cashew	Nutmeg	Rubber	Copra
2011	13,271	18,333	48,802	n/a	34,521	19,958	2,934	59,413	-	3,642
2012	20,217	25,710	108,431	86,011	87,511	21,387	15,121	92,340	12,949	5,422
2013	16,792	21,073	121,188	80,854	83,458	18,188	6,531	63,510	7,258	3,806
2014	18,388	25,211	135,452	103,477	113,962	28,760	7,829	57,971	5,708	6,541
2015	21,703	30,200	113,563	146,000	127,717	28,633	10,408	60,454	4,000	6,470

Source: Forestry and Plantation Agency of Kabupaten Bulukumba, 2016.

3.1.2 Kabupaten Sinjai

Sinjai has a lower population and a correspondingly lower GRDP than Bulukumba, although GRDP per head is higher. Economic growth over the period 2010 – 15 was 43%, (7.4% p.a.), approximately the same as Bulukumba. The most important sector is agriculture, which accounts for 47% of GRDP, followed by construction (12%) and trade (11%) (see Table 10). The fastest growing sector was the information and communication sector which grew by 14% p.a., followed by the Finance and Insurance sector at 12% p.a. (see Table 11).

Table 9. GRDP: Sinjai, 2010–2015

Year	GRDP (Current Price) Rp bn	GRDP (2010 Constant Price) Rp bn	Growth Rate of GDRP Based on 2010 Constant Price
2010	3,782	3,782	-
2011	4,323	4,069	7.6
2012	4,927	4,367	7.3
2013	5,601	4,707	7.8
2014*	6,485	5,036	7
2015**	7,511	5,416	7.5

Source: BPS Kab Sinjai 2016b & 2015c.

* : Preliminary figure

**: Very preliminary figure

Kabupaten Sinjai's most important products are from the plantation sector (clove, coffee, cacao, pepper, nutmeg, chocolate, and tobacco), rice farming, and marine fisheries; Sinjai has the largest Fish Market (TPI) in South Sulawesi. Sinjai also has a leading domestic chicken product which is called *Akusi* (*Ayam kampung Sinjai*). Many of the farmers also grow fruits, like durians, mangosteen, and rambutan, which they sell to Bone and surrounding areas.

Table 10. Five Largest Contributing Sectors to GRDP of Sinjai (Current Prices)

No	Sector	2010 (%)	2011 (%)	2012 (%)	2013 (%)	2014* (%)	2015** (%)
1	Agriculture, Forestry and Fishing	47	46	46	45	46	47
2	Construction	12	12	12	12	12	12
3	Large-scale trading and wholesale; Car and motorcycle repair	12	12	12	12	11	11
4	Government administration, Defence, and Compulsory Social Security	7	7	7	6	6	6
5	Education Service	6	7	6	6	6	6

Source: BPS Kab Sinjai 2016b & 2015c

* : Preliminary figure

**: Very preliminary figure

Table 11. GRDP of Sinjai: Real Growth Rates for Five Fastest Growing Sectors

No	Sector	2011 (%)	2012 (%)	2013 (%)	2014* (%)	2015** (%)	Average (%)
1	Information and Communication	13	23	21	5	8	14
2	Finance and Insurance Service	20	17	11	6	8	12
3	Mining and Excavation	9	11	10	15	11	11
4	Electricity and Gas Supply	12	8	18	20	-4	11
5	Health and Social Activities Service	10	10	11	10	8	10

Source: BPS Kab Sinjai 2016b & 2015c

*) Preliminary figure

**) Very preliminary figure

In 2015, Sinjai also experienced a long dry season, but the impact was not felt as strongly as it was in Bulukumba. Sinjai's agricultural sector was still able to increase as much as 8% in 2015, meanwhile in Bulukumba, the sector only increased up to 2. This was due to the farming intensification efforts implemented by using appropriate agricultural technology and government quality seed, in addition to optimizing the existing irrigation system.

Government support for economic development in the area has been concentrated on agriculture. In particular, a Strategic Growth Area was developed, with a focus on agriculture, in Kecamatan Tellu Limpoe and Kecamatan Sinjai Selatan. With the improved national roads built through EINRIP, Sinjai is now seeking to become an attractive destination for investment and tourism.

3.1.3 Regional Cooperation

a) RM AKSESS (Regional Management Andalan Kawasan Selatan Sulawesi Selatan/Leading Regional Management South Region South Sulawesi)

Five years ago, spearheaded by the Kabupaten Bulukumba Government, the five *kabupaten* of Jeneponto, Bantaeng, Bulukumba, Selayar, and Sinjai formed the South Sulawesi Southern Key Areas Regional Management, known by its Indonesian acronym RM AKSESS. Its activities include

seaweed and corn production development. However, RM AKSESS's effectiveness has been questioned. It is not yet like PIJAR in Dompu, which has substantial abilities to drive the local economy.

Despite this, some government officials do believe that the cooperation through RM AKSESS has been successful, particularly in Jeneponto, Bantaeng, Bulukumba, and Sinjai. They argue that EINRIP facilitated the implementation of some programs outlined in the action plan over the last two to three years. Prior to the road improvements, discussions around RM AKSESS were limited to the formation of the organization. The limited access between the five *kabupaten* was the main topic of conversation during the initial idea formulation stages.

Local officials reported that it would be easier to extend the regional cooperation to the island of Selayar (off the south coast of Bulukumba) if the provincial road from Bulukumba to the port of Bira was improved. It is currently only 4 m wide and in poor condition. More generally, improvements of access to the ports of Bira and Leppe'e² (in Bulukumba city) would open up possibilities for increased trade with Surabaya, West Nusa Tenggara and East Nusa Tenggara.

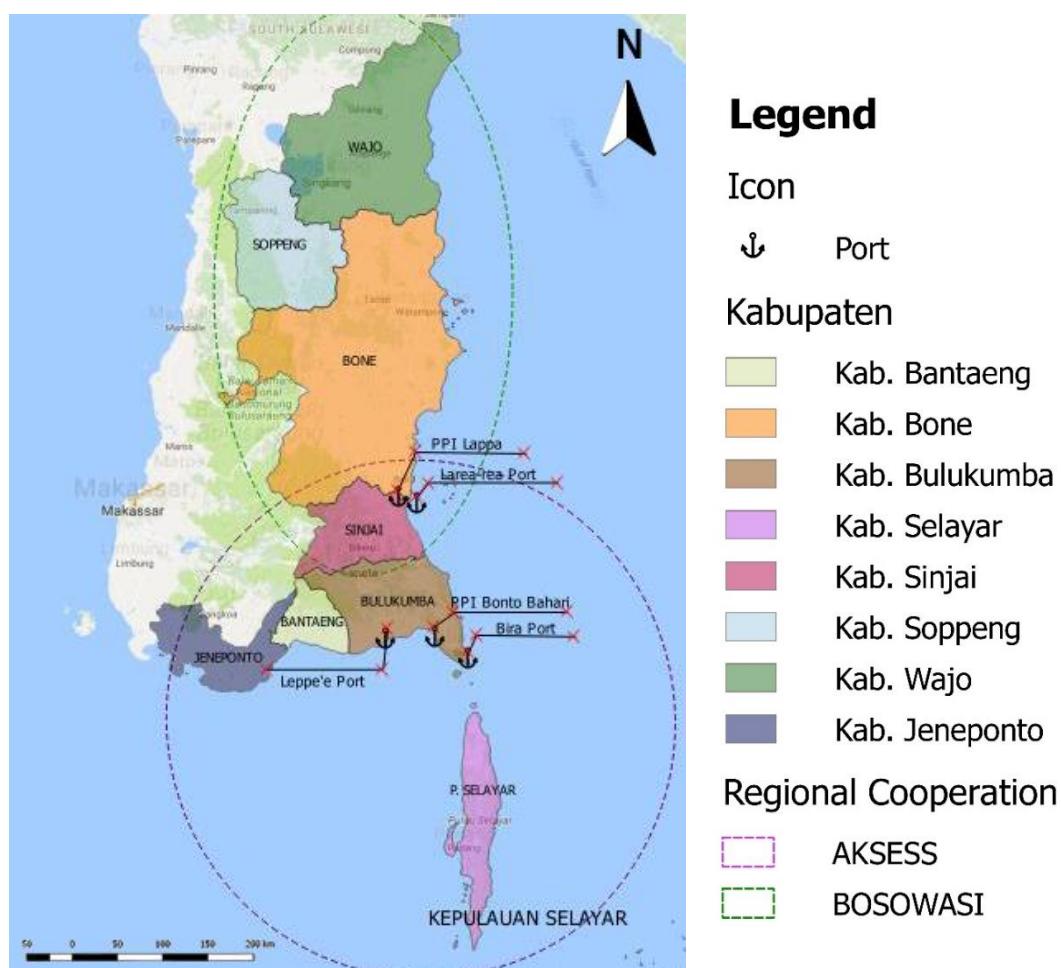


Figure 3. Regional cooperation organizations

²The coordinate location of Leppe'e Port is: -5.545651, 120.213994.

b) Bosowasi

The Bosowasi (Bone, Sopeng, Wajo, Sinjai) cooperation was only established at the start of 2016. The aim of the cooperation is to prepare the *kabupaten* members in facing the opening of the market through the ASEAN Economic Community (AEC). The cooperation framework is developed to improve each region's economic potential, particularly in the agricultural sector. Such products from Sinjai that are going to be developed comprise fish, cloves, and pepper.

3.1.4 Tourism

Another impact of the improved national road due to EINRIP is that people from Bulukumba more frequently visit Marina and Seruni beaches in Bantaeng, which can now be reached in only 30 minutes. Similarly, EINRIP has also resulted in increased traffic flows along the national roads from the direction of Sinjai. Many people from Sinjai travel to Tanjung Bira beach in Bulukumba, or to Marina beach in Bantaeng, and people from these areas also travel to Sinjai. Sinjai has also built a ring road near the Fish Market (TPI) in northern Sinjai for tourists to explore the beach and mangroves.

3.1.5 Local Trade Developments

Bulukumba has also benefitted from the increase in levies because of the large amount of goods from Sinjai passing through the region. Bulukumba has profited from the introduction of many vegetable products from Bantaeng into markets throughout Bulukumba. It is also increasingly easy to distribute cattle and other farm animals from Bulukumba to other areas, such as Jeneponto.

3.2 Land Use Development

3.2.1 Introduction

Bulukumba has clearly expressed ambitions to become a regional center, and the EINRIP road improvements are seen by local officials as making a direct contribution to this development. The *kabupaten* now has a business friendly administration, and has introduced a one-stop service for business licenses. A new industrial estate in Gantarang in the west of the *kabupaten* is being developed, both for agricultural processing and for logistics and distribution activities.

3.2.2 Spatial Planning

In 2012, Bulukumba enacted Regional Regulation No. 21/2012 on Spatial Planning in Kabupaten Bulukumba, which will be effective for the period of 20 years (2012–2032). The spatial plans were mostly made in accordance with the situation in Bulukumba at the time. A number of development zones were defined: Kecamatan Gantarang to be an industrial and agropolitan area; Kecamatan Kajang to be a minapolitan area (focusing on accelerating development of marine and fisheries); the *kecamatan* of Bontobahari, Kindang, and Bontotiro to be tourist areas; and Kecamatan Bulukumpa and Kecamatan Rilau Ale as plantation areas.

The reasons why Gantarang (specifically Kelurahan Jalanjang and Kelurahan Mario Rennu) has been established as an industrial area are as follows:

- Even before the Spatial Planning regulations were in place, various manufacturing businesses and warehouses were already located there.

- The area is not used as a residential area, so there is a significant amount of unused productive and unproductive land.
- The area is a connecting node in the national road network, so there is relatively easy access to other *kabupaten/kota*, including the provincial capital, Makassar.

3.2.3 One-Stop Service Center

Since 2012, Kabupaten Bulukumba has had a one-stop service center (PTSP) to simplify the process to obtain permits. Previously, this process required obtaining permission from various technical government offices. The permit process is now efficient and largely free. For the instances where there is a cost, payments are made at a counter and the set amount is immediately deposited in a bank, so the process is highly transparent.

3.2.4 Recent Developments

In the last five years, Bulukumba has experienced accelerated development. This can be seen with the arrival of big businesses from the banking and trade sectors. An indicator of the economic progress in Bulukumba is that there are now offices representing both state-owned and private banks, such as Mandiri, BNI, and Danamon. The arrival of franchises such as Ramayana and KFC also confirms the new economic potential and increased purchasing power of the people in Bulukumba. In the public sector, the small tax office (KPP Pratama) has been moved from Bantaeng to Bulukumba.

In Kelurahan Jalanjang and Kelurahan Mario Rennu, over the last few years, various factories have materialized, such as cotton manufacturing, paint, and wood manufacturing factories. The unhusked rice drying industry, which is a Singaporean investment, has also benefitted from the EINRIP road improvements in Bulukumba.

Over the last few years, along the sides of the EINRIP roads, lots of locally-owned businesses have appeared, mostly food stalls. New food stalls have been opened and existing food stalls have expanded. In addition to traditional food stalls, mini markets have also been opened in the inner part of Bulukumba and along the EINRIP road.

The improved road networks are also seen as the main reason for the development of new housing complexes near the EINRIP roads. Meanwhile, in the education sector, a number of private institutions have opened, including AKPER, Muhammadiyah University, Al-Gazali, and STKIP. These new tertiary institutions are resulting in students from Bantaeng and Sinjai coming to study in Bulukumba.

Other recent developments include:

- The Bulukumba public hospital which status has been raised from type C to type B, so patients from Bantaeng, Jeneponto, and Sinjai are referred to this hospital.
- A new hospital is being built by an investor from Singapore.

IV. LIVELIHOOD AND WELFARE

4.1 Kabupaten Bulukumba & Kabupaten Sinjai

4.1.1 Human Development Index

The human development index (HDI) scores of the study areas, Kabupaten Bulukumba and Kabupaten Sinjai (see Table 12 and 13) have both shown steady increases, and both *kabupaten* lie in the medium category ($60 \leq \text{HDI} < 70$). However, the HDI of Kabupaten Bulukumba is slightly higher than that of Kabupaten Sinjai because the level of expenditure per capita of Bulukumba is higher than Sinjai. Nevertheless, in terms of average duration of education and expected duration of education Sinjai is slightly higher than Bulukumba.

Table 12. Estimation of Kabupaten Bulukumba's HDI

Year	Life Expectancy (year)	Expected Duration of Education (year)	Average Duration of Education (year)	Purchasing Power Parity (Rp 000/year)	Score
2010	66.1	10.8	6.6	9,022	62.7
2011	66.2	11.2	6.6	9,127	63.4
2012	66.3	11.6	6.6	9,136	63.8
2013	66.4	11.9	6.6	9,145	64.3
2014	66.4	12.3	6.7	9,618	65.2

Source: BPS Sulawesi Selatan Dataset (2016).

Table 13. Estimation of Kabupaten Sinjai's HDI

Year	Life Expectancy (year)	Expected Duration of Education (year)	Average Duration of Education (year)	Purchasing Power Parity (Rp 000/year)	Score
2010	66.1	11.3	6.2	7,794	61.3
2011	66.2	11.5	6.4	7,957	62.1
2012	66.3	11.7	6.6	8,092	62.7
2013	66.3	11.8	7.0	8,203	63.5
2014	66.4	12.0	7.0	8,272	63.8

Source: BPS Sulawesi Selatan Dataset (2016).

4.1.2 Poverty and Income Distribution

The poverty rates in both *kabupaten* have decreased. In Kabupaten Bulukumba, the poverty rate decreased from 10.5% in 2009 to 8.4% in 2014 (Table 14). In Kabupaten Sinjai, the poverty rate

decreased from 11.4% in 2009 to 9.6% in 2014 (Table 15). The Poverty Gap Index (P1³) and the Poverty Severity Index (P2⁴) has also decreased since 2009. This shows that, in general, the condition of the poor has improved compared to the previous years.

The number of the poor increased in 2013 in both *kabupaten*, reversing a trend of steady decline from 2009. The increase was due to the increase in fuel (BBM) price in 2013 and was reversed the following year, but poverty remains higher than in 2011.

Table 14. Poverty Rate of Kabupaten Bulukumba

Year	Poor Population (000)	Proportion of Poor (%)	P1 (Poverty Gap Index)	P2 (Poverty Severity Index)	Poverty Line ^a (Rp000/Cap/Mon)
2009*	41.1	10.5	1.5	0.4	177.9
2010*	35.6	9.0	1.3	0.4	200.9
2011*	32.4	8.1	1.0	0.2	221.2
2012*	31.3	7.8	0.9	0.2	233.7
2013**	36.7	9.0	1.0	0.2	249.1
2014**	34.2	8.4	1.2	0.3	260.2

Source: BPS (2010, 2011, 2012c, 2013, 2014 and 2015c).

* Calculated using *Susenas Kor*

**Calculated using *Susenas Modul*

^aThe 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.

Table 15. Poverty Rate of Kabupaten Sinjai

Year	Poor Population (000)	Proportion of Poor (%)	P1 (Poverty Gap Index)	P2 (Poverty Severity Index)	Poverty Line ^a (Rp 000/Cap/Mon)
2009*	25.8	11.4	1.6	0.4	169.4
2010*	24.5	10.7	1.4	0.3	189
2011*	22.3	9.6	1.3	0.3	195.7
2012*	21.5	9.3	1.3	0.3	204.3
2013**	24.3	10.3	1.4	0.3	215.5
2014**	22.6	9.6	1.4	0.3	222.8

Source: BPS (2010, 2011, 2012c, 2013, 2014 and 2015c).

* Calculated using *Susenas Kor*

**Calculated using *Susenas Modul*

^aThe 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.

³P1 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.

⁴P2 indicates the distribution of expenditure among the poor. The higher the index score, the higher the expenditure gap among the poor.

The income gap between the rich and poor has grown, as can be seen from the increase of Gini ratio in 2009 to 2014 (Table 16). Kabupaten Bulukumba's Gini ratio increased from 0.27 (2009) to 0.39 (2015). This was also the case with Kabupaten Sinjai, its Gini ratio increased from 0.31 (2009) to 0.40 (2015). Since 2011, the Gini ratios of both *kabupaten* were higher than that of rural Indonesia. The Gini ratios of the two *kabupaten* are fluctuating.

Table 16. Gini Ratio for Kabupaten Bulukumba and Kabupaten Sinjai 2009–2015

Year	Gini Ratio				
	Bulukumba District*	Sinjai District*	South Sulawesi Province	Indonesia (Rural)	Indonesia (Urban+Rural)
2009	0.27	0.31	0.39	0.29	0.37
2010	0.29	0.31	0.40	0.32	0.38
2011	0.36	0.38	0.41	0.34	0.41
2012	0.35	0.40	0.41	0.33	0.41
2013	0.42	0.34	0.43	0.32	0.41
2014	0.42	0.38	0.42	0.32	0.41
2015	0.39	0.40	n.a	0.33	0.41

Source: Susenas 2009–2015 (calculated by SMERU(*)) and BPS (2016b, 2015a, 2015b, 2012a, 2012b).

The distribution of purchasing power between income groups shows a similar pattern. Over the 2009–2015 period, although all groups showed increases in purchasing power, the growth in the richest groups was substantially higher than that of the lowest. In Bulukumba, the total monthly expenditure of a person from the poorest group (decile 1) increased by 37%, while a person from the top decile (the wealthiest group) experienced a 170% increase (see Figure 4). In Sinjai, the total monthly expenditure of a person from the poorest group (decile 1) increased by 34%, while a person from the top decile (the wealthiest group) experienced a 117% increase (see Figure 5).

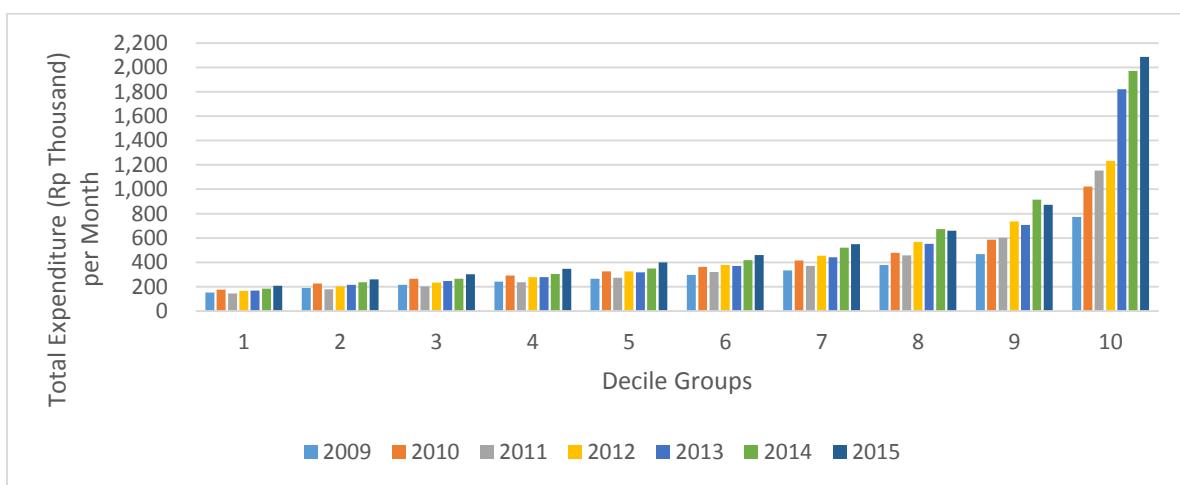


Figure 4. Total expenditure per capita per month of Kabupaten Bulukumba 2009–2015

Source: Susenas 2009–2015 (calculated by SMERU).

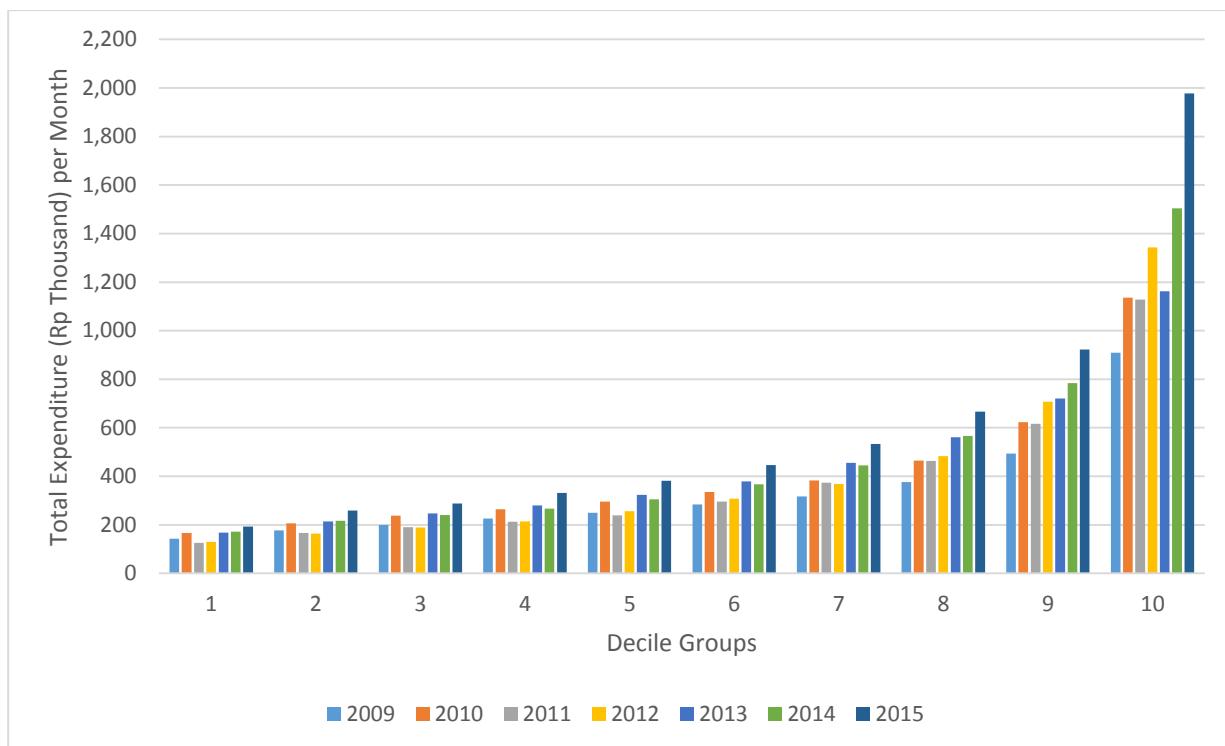


Figure 5. Total expenditure per capita per month of Kabupaten Sinjai 2009–2015

Source: Susenas 2009–2015 (calculated by SMERU).

4.2 The Livelihood of Bulo-Bulo Villagers

4.2.1 Economic Activities

a) Agriculture

The main livelihood source of Desa Bulo-Bulo villagers is agriculture, growing such crops as rice and corn; plantation (using the polyculture (*tumpang sari*) system), such as clove, cacao, pepper, and nutmeg; as well as fruits, such as durian, rambutan, snake fruit, and mangosteen. Only rubber is produced through monoculture farming in Bulo-Bulo.

During the clove harvest season (June-August), many villagers, women and men, go to Bone, Kolaka, and Palu to work as clove pickers. They usually go 6 to 8 people per group, particularly from Dusun Samaenre dan Palipi for about two months and would reach a number of 77 family heads.

In 2015, Desa Bulo-Bulo experienced a long dry season, resulting in almost 30% of the rice field being unplantable due to lack of water. Rice fields and rivers became dry so villagers could not use the river for irrigation sources, thus causing harvest failure.⁵ Sapabessi, Samaenre, and Palipi were the *dusun* especially affected. According a village official, the harvest failure reached up to 90% and about 30% of crops died off (particularly mangosteen and durian trees). Consequently, many villagers sought jobs outside the village and some became migrant workers in Malaysia.

⁵This decrease in welfare level mainly occurred due to a long dry season in 2015. A village apparatus said that the harvest failure in 2015 had reached 90%. So the increase in poor people was mainly caused by harvest failure which left the poor without any income. Rice fields and rivers became dry so villagers could not use the river for irrigation sources, thus causing harvest failure.

b) Chicken Farming

The broiler businesses began to appear in about 2014. There are about 17 people who each own about 1,000–3,000 chickens or about a total of 30,000 chickens all together.

c) Trade

The number of intermediaries based in Desa Bulo-Bulo has fallen in recent years from 57 people in 2010 to 25 in 2015. In part, this is due to the instability of agricultural prices. If they have already agreed to buy a certain commodity with a certain price, but, during harvest the selling price at the market is lower, the trader will take a loss. However, the road improvements may also have played a role, as there many new traders from outside the village coming to Bulo-Bulo, and many local traders were no longer able to compete

The number of peddlers coming to Desa Bulo-Bulo has increased since the village road was asphalted (2012). Since the last three years peddlers using motorcycles have increased (2013) and those using pickups have arrived a year ago (2015). The types of items being sold varies, among them, vegetables, eggs, and clothes. Fish peddlers have been in Desa Bulo-Bulo even before the national road was improved.

The Tanate Market building was renovated starting in 2015. During renovation, traders moved to the temporary location at Lingkungan⁶ Biroro (Kelurahan Tanete) which is about 4.5 ha in size, compared to Tanete Market which is only 1 ha. The renovation was completed in January 2016. When this study was conducted in Mei 2016, the old traders were still not allowed to use the new renovated market. The market days have not changed, they are still *Legi* and *Pon* following the Javanese calendar. In interviews with business actors in Desa Bulo-bulo, they stated that they have felt the positive impact of the national road improvement. Some of them had built a shop, expanded their shop, added new items to sell, provided parking spaces, built public toilets, and provided sitting areas for people to rest. As a result, for one respondent, sales turnover increased (from Rp 500,000/day to up Rp 1 million/day). In addition, one resident had opened a small business selling Pop Ice in front of his house, obtaining an average profit of Rp 20,000/day.

4.2.2 Community Welfare: Findings of the Focus Group Discussions

Both the men's and women's FGD used the same classification of community welfare levels of Desa Bulo-Bulo as in 2009, i.e., consisting of four stratifications (i) rich, (ii) middle-class), (iii) poor, and (iv) very poor. The criteria used by the FGD participant to determine the welfare level of community members are also very similar to those used in 2009, namely (i) the condition of their house, (ii) wealth, (iii) savings, (iv) work, (v) education, (vi) health aspects. In the 2016 FGD there are two new characteristics: the quality of food (in the men's FGD) and life attitude (in the women's FGD).

a) Women's FGD

The results of the women's FGD show a change in the indicators for the house, namely household appliances, where the washing machine is no longer an indicator for middle-class households in 2016. In addition, young couples who still live with their parents/relatives are categorized as poor. Looking at the assets, it is apparent that the size of the land owned by the rich and middle-class group has decreased (because plots were given out to their newly wed children), and that motorcycle ownership became a new characteristic of the poor and middle-class group.

⁶Lingkungan is equivalent to *dusun*.

One welfare characteristic that has undergone significant change is that the community members now engage with banking institutions, where people have savings in banks and no longer save in the form of jewelries. At present, there is also a new type of job, broiler farming. Aside from these changes, the education achievement of children from middle-class, poor, and very poor families have improved.

In terms of access to health services, the poor and very poor families are still very dependent on the government's social protection program, which was previously called Jamkesmas and now called KIS (Kartu Indonesia Sehat/BPJS). Only the rich and the middle-class groups are able to participate as voluntary members (*peserta mandiri*) in the BPJS-health program.

Table 17. Welfare Group Characteristics 2016—Perceptions from the Women's FGD

Indicators	Rich	Middle-class	Poor	Very Poor
Housing				
2016	Luxurious furniture (antique closets and chairs, expensive price), air conditioner, washing machine, refrigerator	Goods and furniture in the house: inexpensive chairs, refrigerator, old-fashioned TV of 14 inches of size, no washing machine	Living in their parents' house (usually the case of young couple), stilt house or semipermanent house	Staying on a relative's land
2009	Complete goods and furniture in the house	Almost the same as those of the rich families: refrigerator, gas stove, washing machine	Usually their house was built on somebody else's land (but some of the families built houses on their own lands).	Staying at somebody else's house or staying on somebody else's land
Assets / Wealth				
2016	2 or 3 cars, 2 motorcycles, depending on the number of the children	1 new or used motorcycle (bought by paying by installments), a land as wide as 10–25 ares	1 motorcycle (used, bought by paying by installments) which is used as a motorcycle taxi to earn money, a land as wide as 5–25 ares for the house only	No assets
2009	More than 1 car, at least 10 hectares of paddy field	1–3 hectares of paddy field	-	-
Savings				
2016	Big amount (Bank accounts)	1–10 million rupiah	No savings, usually in debt for children school fee and daily needs, amount of debts to neighbors or grocery stores (<i>warung</i>) is around Rp 500,000	Having debts of small amount, usually even receive assistance of charity
2009	Saving in the form of jewelry	Jewelry items of not-too-expensive type	Earrings only	Some of the money earned from selling the harvested crops is commonly used to buy jewelry items; in case they are in need of money, the jewelry items will be sold.

Indicators	Rich	Middle-class	Poor	Very Poor
Education				
2016	Graduated from an undergraduate program in Bulukumba or Makassar	Graduated from senior high schools; there are also some of them who only graduated from elementary or junior high schools and did not continue their education to a higher level; some of them even dropped out of elementary or junior high schools	Graduated from senior high schools; there are also some of them who only graduated from elementary or junior high schools and did not continue their education to a higher level; some of them even dropped out of elementary or junior high schools	Only graduated from elementary or junior high schools; there are also some of them who dropped out of elementary or junior high schools for financial reasons (could not afford the transportation, clothing, and stationery costs)
2009	Their children can go to Makassar or Jakarta to study	Only some of them can send their children to Makassar to study	Graduated from junior high schools or dropped out of senior high schools	Graduated from elementary schools or dropped out of junior high schools
Healthcare				
2016		Registered as voluntary members/participants of the National Health Insurance Scheme (BPJS Mandiri)		KIS (the Indonesia Health Card) holders
2009	Out of their own pocket	Receiving assistance from relatives for medical treatments	Registered as participants/members of Jamkesmas (Community Health Insurance Program)	Registered as participants/members of Jamkesmas and Jamkesda (Regional Health Insurance Program)

b) Men's FGD

The results of the men's FGD show that the characteristics of the condition of the houses of the four welfare groups did not change. In terms of vehicle ownership, there is an increase in welfare of the middle-class group which is apparent from their ownership of old cars and of the poor group, apparent in their ownership of secondhand motor bikes. The amount of savings of the middle-class has increased and the poor have obtained trust from their neighbors to borrow money although only in a small amount (less than Rp 1 million). The same with the findings in the women's FGD, broiler farming is also identified as a new job in the middle-class group.

The education achievement of children and access to health facilities have changed to some extent. Where previously they did not graduate from primary or lower secondary school, but now they have. Children from the poor and very poor groups will be taken by their parents to work as a migrant worker in Malaysia or in some cases, boys will choose to work to help raise the family income. Meanwhile, the poor and very poor groups' access to health services is very much supported by the government's social protection program (health card/KIS). In addition, Desa Bulu-Bulo people's access to health facilities has increased due to the fact that Puskesmas Sallasae has launched inpatient services since 2012.

Participants of the men's and women's FGD in general provided the same description for house conditions of the four household welfare levels. However, there is one difference. Participants of the women's FGD described household utilities such as stoves, refrigerators, and washing machines in more detail.

Those who are considered rich are business people or farmers, owning a rice field or plantation of 5 ha. Farmers are considered middle-class if they own a rice field of 1-2 ha, or if they own a broiler farming business of about 1,000 chickens. The poor in general are sharecroppers who own capital, while the very poor group are farmhands or sharecroppers who do not own capital. In 2009, rice field and plantation ownership by the rich was at least 10 ha, but today it is only 5 ha, proving that rice field ownership in every family today has decreased.

Table 18. Welfare Group Characteristics 2016 – Perceptions of Men's FGD

Indicator	Rich	Middle-class	Poor	Very Poor
Housing				
2016	Permanent house, brick wall, multi roof, tile/marble floor, luxurious and complete furniture	Permanent house, tile floor, common furniture	Semi-permanent house, brick + wooden wall, cemented floor, Plastic and wooden chair	House is built on other people's land, hut, thatched roof, No furniture
2009	Good house, nearly as good as luxurious house according to the village's standard, brick wall	Permanent house The house's average size was 7m x 9m.	Stilt or wooden house, not brick house Small wooden house, with the size of 30-40m ²	Hut built on other people's rice field or field. Living on field owner's land
Assets				
2016	Luxurious car and cash: brand: Innova, CRV, Fortuner), expensive motor cycle	Old car (brand: square Kijang), new car but bought on credit, regular motor cycle	Old motor cycle (used)	Have no vehicle
2009	Have a car : can have as many as 3	Have a motor cycle	Have no vehicle	Have no loan to pay back because they have no money.
Savings				
2016	Bank savings beyond Rp 50 million	Bank savings less than Rp 50 million	No savings. Some have borrowed money less than Rp 1 million from their neighbor	Have no savings and loan to pay back. Wait for charity from other people/neighbors/family
2009	- Have savings in a bank	- Have savings in a bank between Rp 500.000 s/d Rp 2 million	Have no savings	Income is obtained from charity.
Education				
2016	Level of education: undergraduate or doctoral	High school–undergraduate, some are pursuing their master's in Makassar	Graduated from elementary or junior high school; did not continue because they wanted to work to help their parents	Graduated from elementary school
2009	Their children can continue to university	Their children usually have a university level of education.	Can only put their children to junior high school	Dropped out of school

Indicator	Rich	Middle-class	Poor	Very Poor
Health				
2016	Go to the Makassar hospital	Go to a doctor in a <i>puskesmas</i>	Go to a <i>puskesmas</i> ; some go to a traditional healer	Go to the <i>puskesmas</i> , traditional healer, and hospital because they have a health card (KIS)
2009	Usually go to a doctor or to Makassar	They don't only go to a <i>puskesmas</i> , but also to a doctor, and even to Makassar,	When sick, hardly ever go to a doctor and usually go to a traditional healer Go to a health facility and use a Jamkesmas or Askeskin card	Go to a traditional healer or treat themselves by using traditional medication (herbs)

Interviews with respondents show that in many ways the welfare condition in Desa Bulo-Bulo in the last four years has improved, and that almost 70%-80% of the villagers own a motor cycle, which are paid in installments by using their income from clove farming. Many senior high school students as well as junior high school students now go to school by using motor cycles. FGD results (tables 17 and 18) show that many have an undergraduate degree and some even have a Ph.D.

However, Women's FGD results also show that rice harvest results has sharply fell in 2015. Compared to 2014, which reached up to 8 sacks⁷ of rice during harvest, in 2015 only 3 sacks were reached during harvest. A sack of rice which previously weighs 100 kg, due to the drought was reduced to 50 kg in 2015. Plantation products such as clove, pepper, cacao, nutmeg, and mangosteen declined because of the dry season and pest attack. Rubber sap production not only decreased, but its price also fell. The price of rubber in 2014 reached Rp 13,000 per kg, but in 2015 it was only Rp 5,000 per kg. Consequently, the FGD results for both the men's and the women's group show that the welfare level of the people of Desa Bulo-Bulo has decreased when compared to 2009 (see Table 19).

Table 19. Welfare Group Percentages

Year	Rich	Middle-Class	Poor	Very Poor
Women's FGD				
2016	5	44	43	8
2009	12	50	27	11
2005	7	31	40	22
Men's FGD				
2016	7	39	43	11
2009	14	38	40	8
2005	10	28	36	26

This decrease in welfare level mainly occurred due to a long dry season in 2015. So the increase in poor people was mainly caused by harvest failure which left the poor without any income.

⁷1 sack normally weighs 100 kg.

c) Social Life

The view of both FGDs was that better transportation facilities enable families to connect better. The child who lives in Sinjai, or another *kecamatan* can easily go to her/his parents' home. However, in poor families, the parents will contact their child via telephone if they need money.

The FGD results show that women's mobility in the public sphere has increased since the road improvement. Some women usually use motor cycles to go to the market, to Koran recital activities, *arisan*, take their children to school (elementary, junior and senior high school), and attend family ceremonies (parties, wedding, etc.).

However, after the road improvement was completed, women were not afraid to be out at night until 8 p.m. In fact, when a member of the family falls ill, a mother was not afraid to go and take her/him to Bulukumba public hospital at 3.30 in the morning. One of the benefit women feel they get from the road improvement is the reduced time needed to wait for public transportation (pete-pete) when they are going to the market. Before the road improvement, they had to wait an hour, now they only need to wait for 15 minutes

The use of motor cycles by women is dependent on family welfare level and household dynamics, such as if the husband is working away from home, the wife has to be independent and perform daily activities on her own. The family welfare factor influences the family's ability to buy a motor cycle for the mother.

V. TRANSPORT SECTOR AND SERVICES

5.1 Road Sector Infrastructure Development

5.1.1 EINRIP

The EINRIP road improvements ESS 02 – 06 link the coastal cities of Jeneponto, Bantaeng, Bulukumba and Sinjai (See Figure 1). The improvement thus facilitates transport between the Bulukumba/Sinjai sub-region and Makassar. It also facilitates access to the ports of Bira (on the south-east point of Bulukumba), which serves the island of Selayar, and the port of Leppe'e (in Bulukumba city), which provides links to Kendari in South-East Sulawesi and to NTB.

The road was previously narrow, with a carriageway of 4.5 m, and in poor condition. Following the improvement, the carriageway is 6 m throughout, with 1.5 m shoulders. The horizontal and vertical alignments have been improved, so that sightlines are significantly better than before.

Work on EINRIP in Bulukumba and Sinjai began in 2010 and was completed in two stages. The first stage of 27 km was ESS 02: Bantaeng – Bulukumba (through Kelurahan Gantarang), which was done during the incumbency of Bupati Syukri. The second stage was ESS 04/05/06, a total length of 67 km, linking Bulukumba with Sinjai border, which was constructed during the incumbency of Bupati Zainuddin.

a) Land Acquisition

The two *bupati* took differing approaches to land acquisition. In Stage 1, community land acquisition was initiated by putting up community fences which were built by the *pemda* (local government). In this stage, the leadership of Bupati Syukri (2005–2010), who also happened to be a public figure of Gantarang community, was a major factor. With persuasive means the government was able to encourage the community to relinquish their lands even without receiving compensation.

In Stage 2, compensation was paid for any land, buildings, crops or trees taken for the road improvement. The government during the incumbency of Bupati Zainuddin (2010–2015) decided on the amount based on the framework of NJOP (Tax Object Sale Value), but the fund came from the EINRIP project. There had been some resistance from the community whose lands were affected, but it could be resolved using persuasive means involving the elements of *pemdes* (village government), *pemcam* (*kecamatan* government), and *pemkot* (*kota* government).

Compensation was paid directly to the bank accounts of the project affected people (PAP). Although in principle, all PAP should have been paid compensation, one respondent, who lost a plot of land 3m x 10 m and five trees (jackfruit, chocolate, and pepper), did not receive any payment. Even though the respondent was angry because he did not get compensation, he did not want to complain because he felt that as a community figure it was his duty to support the success of the road improvement. One respondent received compensation in the form of cash (from her cousin) because the respondent's land is still registered under her cousin's name. Generally, the compensation money was used to buy daily needs.

b) Concerns of the Local Population

The plans for widening ESS 05 had to be changed when there was local opposition to the felling of a banyan tree⁸, and the necessary land was taken from the other side of the road.



(Yudi Fajari/SMERU)

Figure 6. The banyan tree that could not be felled

Another thing that became the talk of the subdistrict, was the landslip that occurred in the Makam Pahlawan cemetery area of Kecamatan Bulukumpa. Local residents believe that a retaining fall should be built to prevent future landslips. The Kecamatan Bulukumpa government has sent a letter of complaint to the relevant section of Bina Marga⁹, but no action has yet been taken.

5.1.2 Local Road Improvements

Local governments generally have not enough money to maintain and improve local roads. However, according to the Directorate General of Highways (DGH Office) the local government is now allowed to propose a budget for construction or improvement of roads to the central government if the volume of traffic on existing roads has increased.

To address the funding problem, central government is providing financial assistance to the *kabupaten* through the Special Allocation Fund (DAK) for the Regional Infrastructure Development

⁸One of the respondents said that he was approached by an old man who revealed himself as the dweller of the banyan tree and if the tree is chopped this will cost the lives of seven villagers. Another story from another source is about a dream of one of the PT Multi Structure workers that he was bitten by a snake a day before the tree was planned to be felled.

⁹Balai Pelaksana Jalan Nasional which is located at Kota Makassar (Jl. Masjid Raya).

Acceleration Program (PPID), which can be used for any form of infrastructure, including roads. This fund has only been available during the presidency of Jokowi. Therefore this year Sinjai received an allocation of Rp 90 billion this year, and may receive additional funds at the end of the year.

Desa Bulo-Bulo

Local roads in Desa Bulo-Bulo have been improved significantly since 2012, funded by the local government budget (APBD), PNPM, PPIP (an infrastructure improvement program run by the central government), and the Village Allocation Fund (ADD). Improvements included asphalting, construction of concrete roads and improvements to earth road with the use of lean concrete. Local residents reported that the improved condition of the village road helped the smooth distribution process of fertilizers to people's houses and the transfer of harvest results to intermediaries.

5.1.3 Attitudes to EINRIP

In general, the respondents gave positive feedback toward and are satisfied with the widening of the national road, including the comfort of riding a vehicle, the strict supervision during the road improvement process, and the complete traffic signs and reflectors which appear to be functioning at night. However, there are still complaints about the position of an electricity pole that is in the middle of the shoulder which has not been moved to a different location. Another complaint expressed by respondents is that not all drains in front of residents' houses are provided with a cover.



(Dinar D Prasetyo/SMERU)

Figure 7. An electricity pole in the middle of the road shoulder.

The people still use the road shoulders to dry crops after harvest. Because of this, some villagers object to trees being planted at the roadside which stand in the front or near their house. The trees will grow and their leaves will cast shadows on the road and shoulders.

5.2 Port Developments

Bulukumba has two ports, namely Bira port for ferry transport and Leppe'e port for goods transport. The ferry transport route starts from Bulukumba via Bira to Pulau Selayar. The trade potential between Selayar and Bulukumba via Bira and Leppe'e is very high as they can connect not only the other regions in the southern part of South Sulawesi but also the regions in different provinces,

such as Surabaya, Southeast Sulawesi, East Kalimantan, NTB (West Nusa Tenggara) and NTT (East Nusa Tenggara).

Leppe'e port handles cargo only. This port can be used to dock large ships, so it has development potential. For example, Leppe'e port can be a gateway for cattle distribution from NTB to Tana Toraja region, where in one shipment the number can reach up to 1,000 cows.

In 2013, Bulukumba has also built a Fish Landing Port (PPI¹⁰) in Tanah Lemo, Kecamatan Bonto Bahar¹¹ with an area of 2 ha using the fund from the APBN (state budget). This port is equipped with many facilities, such as a culinary center, tourist attractions, a fish auction site, and an ice factory. This is because Bulukumba has the largest fishing catch in South Sulawesi.

In Sinjai region, there is a ferry port used for passenger transport and another port for goods transport. Larea-rea port¹² was originally intended to serve as a ferry port but the plan was cancelled because it did not meet the technical requirements; since then, it has functioned as a docking place for small boats made from wood that are used to ship goods. Not far from Larea-rea there is a PPI Lappa¹³ that operates 24 hours and the fish from this place are sent to other *kabupaten* in South Sulawesi and those of export quality such as tuna, mackerel tuna, and skipjack tuna (TTC) are shipped to Makassar. These marine products are usually shipped by trucks or pickup trucks travelling by land, which means the EINRIP road is very strategic as it facilitates the ease of fish shipment; thus fish products can be fresher.

5.3 Intercity Transport

5.3.1 Transport of Goods

a) Traffic Flows

The Jeneponto – Bantaeng – Bulukumba – Sinaji road is now in good condition and is now preferred as an alternative route for traffic between Sinjai¹⁴ (and points north) and Makassar. Traffic volume has grown substantially since the improvement, but is still relatively low. The only periods when traffic can be considered heavy is during the rice harvest in April and September and the religious festivals of Eid al-Fitr and Eid al-Adha.

¹⁰PPI stands for *pangkalan pendaratan ikan* (fish landing port). PPI is a Class D fish port which is the lowest level out of four levels. A fish port has a main facility, functional facility, and support facility. Part of the functional facility includes a place to sell fish (*tempat pemasaran ikan*-TPI), access to clean water, a fuel filling station, ice supply, electrical installation, and office space, such as the administration office of the port and banks, etc. (Source: Decree of the Ministry for Maritime Affairs and Fisheries No. 08/MEN/2012 on Fish Ports (Peraturan Menteri Kelautan dan Perikanan RI 08/MEN/2012 tentang Kepelabuhan Perikanan), articles 4, 5, and 9.

¹¹Coordinate location for PPI Bonto Bahari is: -5.537160, 120.366830 (see more details at: http://pipp.djpt.kkp.go.id/profil_pelabuhan/2880/informasi).

¹²Coordinate location for Larea-rea is: -5.120182,120.298897.

¹³Coordinate location PPI Lappa is: -5.106706, 120.271098 (see more details at: http://pipp.djpt.kkp.go.id/profil_pelabuhan/1608/informasi).

¹⁴From Sinjai, there is provincial road that offers a shorter route to Makassar. However, road condition is even poorer and the terrain is hilly. The coastal road is now the preferred route, particularly for trucks.

b) Vehicle Operating Costs

Truck drivers who transport cement from Makassar to Bulukumba stated that after the national road had been improved by EINRIP:

- The travel time has been reduced, which means that there is time saved that can be used for frequent or longer breaks
- There is a twenty-liter reduction in the use of fuel per trip
- The road is wider so vehicles from the opposite direction can pass more easily
- The frequency of tire changing has gone down because tire-blowout incidents have become less frequent

In the agricultural and fisheries sector, product quality is also better maintained because the products reach the destination faster. Particularly, in the shipment of cattle and fish products such as TTC (Tuna, Mackerel Tuna, and Skipjack Tuna) that is to be delivered to other *kabupaten* or exported via Makassar. It is because when the road was still narrow and in poor condition, the length of the trip had caused cattle to experience weight loss, suffer from sickness and even die, and the fish transported were no longer fresh.

5.3.2 Public Transport (regional)

In general, the condition of the public transportation services is still the same in the 2009 study and the 2016 study. The public transport service operating between *kabupaten* used medium sized utility vehicles such as Isuzu Panther, Kijang and, Suzuki APV. The routes were Bulukumba–Sinjai, Bulukumba–Bone, and Bulukumba–Makassar. The difference lies in the number of passengers, which in 2016 has declined. In 2009, vehicles had to first be full of passengers in order to run. Now, with only three passengers, the vehicles will move and find passengers along the road.

A bus with a capacity of 50 passengers still operates on the Pulau Selayar–Makassar route and the Jeneponto–Kendari¹⁵ route. Complaints about the lack of passengers was expressed by the Jeneponto–Kendari bus driver, which previously can drive up to 40 passengers, but now only have at the most, 10 passengers.

Following the road improvement, public transport operators are very concerned with the increase in competition in the sector. Contributing factors are:

- the increasing number of public transport vehicles,
- great number of illegal public transport vehicles (travel operators) which are allowed to operate. These vehicles are registered as personal vehicles with black registration plates, but they also possess fake yellow registration plates meant for public transports, as a result they can pick up passengers at or take them to their homes, while legal public transports cannot,
- the new bus companies in Bulukumba terminal that serve Makassar–Bulukumba route, namely Cahaya Baru bus company since 2013 and Benua bus company since 2014, and
- an increasing number of people now own motorcycles or cars, and they prefer to use their own vehicles.

¹⁵This route passes through Jeneponto, Bantaeng, Bulukumba, Sinjai, and Pelabuhan Bajoe (Bone), and uses the ferry to reach Kolaka Port and then to Kendari (Southeast Sulawesi Province).

Impacts of EINRIP

With good and wide roads, the traffic runs more smoothly. However, the impacts on vehicle operational cost can vary. Although one bus driver stated that there are not many benefits that he felt from the road improvement, other than time saving, in general, truck and public transport drivers said that the operational cost has been reduced (shock absorbers are more durable and fuel consumption has reduced); however tires wear out faster due to high speed.

5.4 Local Transport

There are two types of public transport, namely *angkot* (urban public transport) and *angdes* (rural public transport) which is commonly called *pete-pete*. In Bulukumba at the time of the baseline survey in 2009, there were fifteen *pete-pete* routes, of which seven used the national road. However, there are only two routes left now, namely the routes of Bulukumba–Tanete and Bulukumba–Bira, while others are no longer allowed to operate on the national road and can only cross the road. There are 141 public transport units operating along the Bulukumba–Tanete route now, and 34 units on the Bulukumba–Bira route. At the time of the survey, "*pete-pete*" generally only operated from 06.00 am to 05.00 pm.

The travel time after road improvement has become shorter; from Bulukumba to Tanete, which previously took two hours, now takes only 30 minutes to one hour at a speed of 80 kilometers per hour. The use of fuel is also more efficient, up to 40%; wheel bearings are only replaced once a year now instead of the previously once every four months; and tie rods are more durable.

However, the number of passengers using local public transport is falling. This is because more and more people possess their own motorcycles or cars, and while those who used to keep their vehicles at home, now prefer to use them. As a result, there are many "*pete-pete*" that frequently stop (*ngetem*) by the side of the road to look for passengers.

Another mode of public transport is *ojek* (motorcycle taxi). *Ojek* used to be a legal public transport, but since the *perda* (regional regulation) on *ojek* was revoked in 2012, its status as a public transportation has become unofficial or illegal. In Bulukumba and Sinjai, there is almost no change in the *ojek* business; the traffic volume is relatively stable and there is no increase in competition. However in rural areas, the number of *ojek* has increased because *ojek* is also used to transport goods, such as transporting rice from the field to the house or the village roadside. As a result, the number of horse-drawn carts that in the past were the main form of transport for rice has been diminished. For example in the research village of Bulo-Bulo, the number of *ojek* has gone up from 47 in 2010 to 57 in 2014, while the number of *angkot* has gone down from 5 to 4. The cost for transporting a 100 kg of sack of rice using *ojek* from the field to the road/home is Rp 10, 000, whereas the cost for transporting passengers depends on the distance.

Impact of EINRIP Improvements on Passenger Satisfaction

Based on the results of the FGD at the village level (Desa Bulo-Bulo) and in-depth interviews at the household level, the respondents have felt the benefit of the road improvement. Women have stated that the length of time spent waiting for an *angkot* (*pete-pete*) is even shorter now, from previously one hour to 15 minutes today. This makes it easier for them to go shopping at the market, such as Pasar Tanete, Pasar Palampang, and Pasar Batukaropa (depending on the market day). The men said that sending crops to intermediaries is faster than before. In addition, the travel time to the capital of Kabupaten Bulukumba, has been reduced to less than 1 hour.

5.5 Road Safety

5.5.1 Bulukumba

Between 2009 and 2015, the number of accidents and the severity of the accidents in Kabupaten Bulukumba¹⁶ fluctuated. In general, the number of accidents tended to increase from year to year (See Table 20). There were 67 more accidents in 2015 than in 2014. The number of fatalities fluctuates without a clear pattern, but the number of victims with severe injuries tended to decrease while that of minor injuries rises sharply. The number of victims with minor injuries in 2015 increased by approximately 70% compared to 2014.

Table 20. Number of Accidents in Kabupaten Bulukumba

Year	2009	2010	2011	2012	2013	2014	2015
Total Accidents	106	86	135	197	170	205	272
Fatalities	86	63	82	78	73	89	71
Severe injuries	81	35	67	145	114	55	23
Minor injuries	74	56	63	105	78	198	343

Source: Kecamatan Bulukumba in Figures, 2010–2015 & Data Recapitulation of the Traffic Unit of Kecamatan Bulukumba Police Precinct, 2016.

The increase in the number of accidents coincides with the completion of the EINRIP roads, which improved surface quality and horizontal and vertical alignments. In the interviews with the truck and bus drivers, it was acknowledged that the EINRIP road improvement provides comfort in driving on vertical and horizontal curves because the road has become wider and the inclination of the road slope has been reduced. Nowadays, drivers of large vehicles do not have to take turns when climbing a slope. However, based on the interviews with various parties, it was also acknowledged that better road condition triggers higher speeds, both for motorcyclists and car drivers¹⁷. For example, if previously a vehicle could only be driven up to a maximum speed of 40 km/hour, at present, the speed of that vehicle can be accelerated to more than 80 km/hour.

Kecamatan Bulukumba

The increasing number of accidents is also found in the *kecamatan* study area, Kecamatan Bulukumba, which directly borders Kabupaten Sinjai. In 2009, the number of traffic accidents was not prominent, but in 2015 the number occupies the fourth place in the most cases handled by *puskesmas* (community health center), coming after the treatment of hypertension, asthma, and diabetes. According to the results of the interview with Puskesmas Tanete, traffic accidents reached up to 248 cases in 2015. The severity of the accidents is also quite high. Meanwhile, the interview with Puskesmas Salassae shows that traffic accidents are in the top ten of emergency measures.

¹⁶Table 20 shows accidents for the whole *kabupaten*. Details of the accidents reported on the EINRIP roads can be found in the EINRIP M&E Annual Reports.

¹⁷This finding is confirmed by the measurements of speed carried out under the EINRIP M&E program. See M&E Annual Reports.

5.5.2 Sinjai

Meanwhile, in the Kabupaten Sinjai area, based on the data reported by the Kabupaten Sinjai Police Precinct, since 2010 the number of accidents has had the tendency to increase with the following details: 32 cases (2010), 61 cases (2011), 55 cases (2012), 54 cases (2013), and 65 cases (2014). The number of fatalities had a tendency to decrease between 2011 and 2014, in which the lowest number was in 2012 with as many as 33 people, from the previously 46 people in 2011. Conversely, the number of victims with minor injuries has been increasing with the highest increase in 2014 at 70 people from the previously 19 people in 2013.

In the Kecamatan Sinjai Selatan area which directly borders the *kecamatan* research location, the number of accidents has also increased significantly each year. The most drastic increase mainly occurred between 2011 and 2012. Meanwhile, the accident rate in 2014 is ten times the accident rate in 2009. This trend of increased accidents that had taken place before 2014 cannot be associated with the EINRIP road improvement on the Bulukumba–Sinjai axis, which was undertaken in the beginning of 2015.

Table 21. Number of Accidents in Kecamatan Sinjai Selatan, Kabupaten Sinjai

Year	2009	2010	2011	2012	2013	2014
Total Accidents	22	19	0	133	228	247

Source: Kecamatan Sinjai Selatan in Figures, 2010–2015 (from the *puskesmas*).

The results of interviews with the road-side traders in Sinjai Selatan region show that there is indeed a tendency of an increase in the average speed of road users. The previously narrow and rocky condition of the road forced road users to drive their vehicles at low speed. In fact, truck and bus drivers often had to stop and pull over due to the steep terrain. Today, vehicles, not only motorcycles but also truck and buses, are driven at high speed. Large vehicles are no longer slowing down or stopping at the road side. In addition, there is a need for more road signs, such as concave mirrors at road curves, flashing yellow traffic lights and warning signs at road curves where accidents often occur. There are also some tree species planted by the road that grew too dense that they can obstruct the signs or the view of the road, or in which roots may damage the road. Meanwhile in Sinjai, there is a drainage system that cannot accommodate rainwater, and there are roads that often experience landslides because they are located on the side of a cliff or hill.

Based on the interview with the *camat* (*kecamatan* head) of Sinjai Selatan, the number of accidents in Kecamatan Sinjai Selatan region has relatively increased since the road improvement. There are at least three factors that cause traffic accidents in the region, namely: (i) lack of community understanding of road signs and safety, (ii) minimum road lighting, (iii) several road signs and paraphernalia that are broken and have not been repaired.

5.5.3 School Children

Based on the interview with several parties, including the government officials and the community, traffic accidents mostly involves students - especially students of junior and senior high school - who ride motorcycles to school. The probability of the high rate of accidents that involves students is supported by the fact that that the number of student motorcyclists is very high. For instance, in one high school visited by researchers, it was found that there were more than 50% students using motorcycles to school.

The Bulukumba police tolerates students who drive motorcycles without a license. Poor understanding of traffic regulations has caused dangerous driving behavior. The awareness to use safety gears is also very low. In fact, researchers often found that student motorcyclists do not wear helmets. Not just on regular school days, after successfully passing exams, students often ride their motorcycles in a convoy without using any safety gears and they usually drive in high speed.

Puskesmas Salassae dan Puskesmas Tanete staff have complaint about the driving behavior of the community that causes accidents. Also how people cross the streets without being careful, looking right and left. Most of the victims of road accidents are junior and senior high school students.



(Graham R Gleave)

Figure 8. Students' Motorcycles at Tanete High School

5.5.4 Traffic and Road Transport Forum

Kabupaten Bulukumba and Kabupaten Sinjai have a discussion and coordination forum called the Traffic and Road Transport Forum. This forum was established based on the mandate of Law No. 22 Year 2009 on Traffic and Road Transport. Activities undertaken by this forum are planning, evaluating, finding solution, handling, and anticipating the possibility of problems arising in the traffic sector. The forum led by the head of the Transportation, Communication, and Information Technology Agency consists of various cross-sector agencies. However, the implementation of this forum in Kabupaten Bulukumba and Kabupaten Sinjai lacks effectiveness. There are no concrete forum activities to solve traffic problems. It appears that this might be due to the legal basis of the establishment of this forum, in this case the decree of the *bupati*, which has not translated the duties and functions of each agency into measurable achievements.

Meanwhile, various concrete activities have been separately initiated by different agencies whose work is related to traffic and road transport. For example, Kabupaten Bulukumba District Police Precinct conducts routine socialization activities to schools every week. Traffic safety socialization is integrated with the flag raising ceremony in junior and senior high schools by appointing a police officer as the inspector of the ceremony. Kabupaten Bulukumba Police Precinct has also established morning, noon, and evening monitoring posts to monitor traffics at certain points every day.

VI. HEALTH AND HEALTH SERVICES

6.1 Health Conditions

6.1.1 Bulukumba

The health condition of the people of Kabupaten Bulukumba, particularly in Kecamatan Bulukumpa, today is quite different when compared to that in 2009. The interviews at a *puskesmas* in Kecamatan Bulukumpa reveals that in 2009 the types of diseases that were typically suffered by the villagers were muscle sprains, hypertension, and upper respiratory tract infection. In 2016, the types of diseases commonly suffered by the community are hypertension, asthma, and diabetes. Diseases caused by poor environmental factors are currently replaced by non-communicable diseases such as hypertension. The people's unhealthy diet pattern is the main contributing factor to the condition.

Concerning HIV/AIDS cases that was once found in Kecamatan Bulukumpa, in 2015, it was also discovered that there were two men with HIV/AIDS. *Puskesmas* Sallassae admitted that at the provincial level of South Sulawesi, in general Kabupaten Bulukumba ranks third among regions having the most HIV/AIDS patients after Makassar and Pare-Pare. However, the largest number of HIV/AIDS patients does not reside in Kecamatan Bulukumpa, but in Kecamatan Botobahari and Kecamatan Ujung Bulu.

6.1.2 Sinjai

In Kecamatan Sinjai Selatan, based on the 2010–2015 *kecamatan* in figures data, the disease trend has shifted in the past six years. In 2009, respectively, influenza, rheumatism, maternal and child health disorders, asthma, and anemia were the five diseases most treated in *puskesmas/pustu* (supporting community health center) facilities. In 2014, the five diseases most typically suffered by *puskesmas/pustu* patients are hypertension, whooping cough, influenza, asthma, and anemia with notes that maternal and child health disorder is not included in the calculation.

6.2 Health Care Services

6.2.1 Kecamatan Bulukumpa

In Kecamatan Bulukumpa, there have been changes in terms of the availability of health facilities in the last seven years. In 2009, there was only one *puskesmas* that was the primary treatment destination for the community, namely *Puskesmas* Tanete, located approximately two kilometers from the research village, Desa Bulo-Bulo. Currently, the supporting community health center (*pustu*) of Salassae, which did not function in 2009, has been activated and its status and function has been upgraded into *puskesmas*. *Puskesmas* Salassae started to operate in 2011.

Puskesmas Tanete has gained a PONED (Obstetric and Neonatal Emergency Service) status. For its patient pick-up service, this *puskesmas* has an ambulance unit, whereas for mobile *puskesmas* service, there is another ambulance unit. At the moment, the personnel of *Puskesmas* Tanete includes the head of *puskesmas*, two general practitioners, one dentist, about 70 interns, 47 civil servants (including nurses), and 4 part-time workers. There are at least 19,880 people with BPJS (Social Security Agency) cards/KIS (Indonesia Health Card) from the surrounding community

registered at *Puskesmas* Tanete. Because the ideal availability of health workers has been met, this *puskesmas* receives Rp 6,000 of capitation fund per person.

6.2.2 Kecamatan Sinjai Selatan

The availability of health facilities in Kecamatan Sinjai Selatan in 2014 is adequate with the existence of 11 *puskesmas/pustu* which are spread in each of the villages, 2 *polindes* (village level childbirth care facilities) in Desa Sangiasseri and Desa Puncak, and 45 *posyandu* distributed at hamlet level. This number has increased compared to six years ago. At that time, the number of *posyandu* was only 41 units at hamlet level and there was no *polindes* at village level. The community of Kecamatan Bulukumpa often relied on *Puskesmas* Samaenre in Kecamatan Sinjai Selatan. In fact, to accommodate the growing number of patients, it was planned that the *puskesmas* would be converted into a type-D hospital

6.2.3 Desa Bulo-Bulo

Bulo-Bulo villagers who live at the roadside have four options regarding health facilities. They can choose to go to any one of these three health facilities in Kecamatan Bulukumpa: *Puskesmas* Tanete, *Puskesmas* Salassae, and a private medical practitioner, dr. Yuni; or go to *Puskesmas* Bontobangun in Kecamatan Rilau Ale.

The status of *Puskesmas* Salassae had been a *pustu* until 2009, when it was developed and in 2011 began operating as a *pukesmas*. *Puskesmas* Salassae began to provide inpatient care service in 2012. This *puskesmas* serves four villages, namely Desa Bulo-Bulo, Desa Bontomangiring, Desa Salassae, and Desa Jojjolo. The *puskesmas* has two ambulance units; one unit is used for mobile *puskesmas* service and the other for delivering referral patients. Currently, the personnel of the *puskesmas* comprises 14 civil servants, 4 part-time workers (3 midwives and 1 dentist), and 47 intern students (nurses, midwives, and health analysts). The *puskesmas* serves 5,196 BPJS/KIS participants and receives capitation fund that amounts to Rp 5,000 per person.

Aside from *Puskesmas* Salassae, the community in the research village of Bulo-Bulo also receives basic health services such as health examination for pregnant women, babies, and toddlers at a smaller level through the integrated health service posts (*posyandu*)¹⁸ for toddlers. In 2009, there were four *posyandu* for toddlers spread in remote *dusun* (hamlets). This year, the number of *posyandu* for toddlers has increased to five.

There are some people in the research village of Bulo-Bulo that still prefer using the service of traditional health workers such as shaman (*dukun*) or sandro (traditional *dukun*).¹⁹ However, at present the practice of getting traditional health service has significantly dropped due to the easier access to *puskesmas* and other health facilities.

¹⁸A *posyandu* or an integrated health service post is a medium for a village/*kelurahan/RW* community to provide basic health services for its own members. The main objective is to help reduce Under-Five and Maternal Mortality Rates. The services, given by local PKK cadres assisted by a *puskesmas* medical staff member, include immunization, weight measuring, and general health check for children under the age of five as well as general health check for mothers and the elderly.

¹⁹A *dukun* provides alternative health treatment, while a *sandro* not only gives alternative health treatment but also helps women give birth (Baseline Qualitative Social Survey – 2009: 9).

6.3 Impacts of Road Improvement

Road improvement has brought positive effects on the improvement of healthcare services. Based on the interview with an ambulance driver of *Puskesmas* Tanete, road improvement shortens the time needed to take a referral patient from *puskesmas* to the general hospital (RSUD) of Kabupaten Bulukumba. Previously it took a minimum of 45 minutes of driving from *puskesmas* to RSUD; now it takes only 25–30 minutes of driving. According to *Puskesmas* Salassae, road improvement has increased the number of visits by the health office of Kabupaten Bulukumba to monitor and provide guidance related to healthcare service.

However, it seems that road improvement is not significant enough to bring about positive effects on community's access to healthcare service at local level, as they rely mainly on the *posyandu* at hamlet level and to *Puskesmas* Salassae, the access to which does not depend on the existence of the main road. Based on the profile of *Puskesmas* Salassae, it is found that the number of outpatient visitations in 2014 and 2015 were 136 and 99, respectively. These numbers relatively stable and do not show any impacts of the main road improvement on the number of community's visitations to *Puskesmas* Salassae. One possible reason for this is because of the health scheme transfer from Jamkesda (Regional Health Insurance) to BPJS Kesehatan (Healthcare and Social Security) which has smaller coverage; while with road improvement, people can go to other *kecamatan* - Rilau Ale.

VII. EDUCATION

7.1 Availability of Educational Facilities

7.1.1 Bulukumba

In Kabupaten Bulukumba, the educational facilities from elementary level to university level both public and private that are available are quite complete. Elementary schools are available within the area of the villages; junior high schools are available at *kecamatan* level. In addition, high schools are available within the *kabupaten* area, the majority of which are located inside the region of Kota Bulukumba, while the rest is spread in the *kecamatan*.

Table 22. Comparison of the Number of Educational Facilities between Year 2009 and 2014 in Kecamatan Bulukumpa

Year	TK	SD/MI	SMP/MTs	SMA/MA
2009	20	52	7	3
2014	18	55	10	4

Source: Kecamatan Bulukumpa in Numbers, 2010 & 2015.

The availability of educational facilities in Kecamatan Bulukumpa increased between 2009 and 2014. There is one public high school that has just been built in Desa Bonto Minasa, in addition to junior high schools and elementary schools that are newly built in several villages within the same period. However, in the study area, Desa Bulo-Bulo, the availability of educational facilities has not changed since 2009.

a) Sinjai Selatan

A rather different pattern of change in educational provision can be seen in Kecamatan Sinjai Selatan. The number of kindergarten has gone down from 21 (2009) to 20 (2014), the number of SD/MI dropped from 43 (2009) to 32 (2016), the number of SMP/MTs increased from 10 (2009) to 11 (2016), and the number of SMA/MA went up from 4 (2009) to 6 (2014). On the other hand, the number of higher education institutions has increased. Today, there are four universities in Sinjai, namely the Nursing Academy (Akper), the Midwife Academy (Akbid), STKIP, and STISIP.

The decreasing number of junior schools does not indicate a decline in the capacity of educational services in Kecamatan Sinjai Selatan. The reduction of the number of facilities was only done in order to rationalize the number of students and teachers in one learning group.

b) Desa Bulo-Bulo

In Desa Bulo-Bulo, there are three elementary schools (BPS Bulukumba, 2016b: 17). However, only one elementary school that becomes the core school.²⁰ The closest junior high school to the region of Desa Bulo-Bulo is located in the area of Palampang, Salassae, and Jawi-jawi. In addition, in the region of Tanete, there are two high schools. The elementary school students from Desa Bulo-Bulo

²⁰A core school is a school that always becomes the venue of various events at subdistrict and district levels. This school usually has facilities that are relatively more complete, has more students, and has higher achievements.

usually opt to continue their studies to the junior high schools that are in either Kecamatan Bulukumpa or Kecamatan Palampang. To continue to high school, usually the people access the closest school located in Tanete. Meanwhile, to continue their studies at the university level, they have to travel around 20 km towards the direction of the city of Bulukumba. For the village people, distance becomes a bigger factor to consider than the quality of an educational institution.

7.2 Attendance

7.2.1 Participation Rates

In Bulukumba, official statistics show that since 2009, although the male participation rate has barely changed, the proportion of the women between 7 to 18 years old who are still in school has significantly increased each year, and now surpasses that of men.

Table 23. Schooling Participation of the Population Aged 7–18

Year	Men			Women		
	Students	Total Population	%	Students	Total Population	%
2009	44,194	51,380	86	34,146	44,300	77
2010	39,121	47,089	83	42,950	53,028	81
2011	38,066	45,763	83	42,147	49,655	85
2012	40,134	47,553	84	43,212	49,069	88
2013	44,855	51,181	88	44,563	48,311	92
2014	41,123	46,485	88	42,786	45,798	93

Source: Kabupaten Bulukumba in Figures, 2010–2015.

These findings were confirmed in the in-depth interviews, where it was found that more and more women in Kabupaten Bulukumba have accessed the elementary, middle, and even higher education institutions in the last few years. Currently, a great number of women are listed as students at the local universities in Bulukumba. This is also supported by the findings from the schools visited by the researchers in the study area. In two elementary schools and one high school, the number of female students is higher than that of male students²¹.

In Kabupaten Sinjai, the rate of school participation is much the same as in 2009. To illustrate, when the numbers between 2009 and 2014 are compared, in general they reach 96% - 99% for the elementary school level, 91% – 92% for junior high school level, and 70% for high school level.

Drop-outs

The number of school dropout incidents in 2015 is much the same as the previous years. In 2015, there were five drop-outs in the high school visited by the researchers, consisting of two men and three women. Only one student left school because of economic-related reasons. The other four students had to get married at school age. In other cases, students had left school because their parents made a decision to bring their family to Malaysia to work as migrant workers (TKI).

²¹In SDN 175 Bulo-Bulo there are 161 students consisting of 73 male and 88 female students.

7.2.2 Attitudes to Education

a) Bulukumba

According to the in-depth interviews of various parties, parents are increasingly aware of the importance of education and more willing to keep them in school as long as possible. In addition, the existence of the School Operational Assistance (BOS) has helped reduce the financial burden of children's education. Since 2009, the government of Kabupaten Bulukumba through the social office has also provided scholarship assistance for students from poor families. In addition, the central government through the Scholarship for Poor Students program (BSM) has also provided assistances for poor students. In the three schools that the researchers visited, there were also students who received BSM, proportion of which varies depending on the characteristics of the welfare of the families of the students.²² Another factor contributing to the equal school participation of Bulukumba community is the availability of facilities that are quite affordable. In both the urban and rural areas, school facilities from elementary level to university level are distributed quite evenly.

b) Sinjai

The Government of Kabupaten Sinjai has provided a 9-year free educational fee program since 2004 and by 2008 the program had been upgrade to 12 years (BPS Kabupaten Sinjai, 2013b: 35-36). However, enrolment rates of high school level in Kabupaten Sinjai still remain 72% in 2015. Parents still have to provide some other additional cost for education activities, such as transport fee. BPS Kabupaten Sinjai (2015b: 19-20) shows that actually parents' awareness of the importance of education has increased. They are trying to keep their children in school, at least for 9 years basic education. Additional cost for educational activities becomes a significant consideration to keep their child in school or not, and some of them preferred that their children earn a living. In line with the secondary data, interview with BPS Sinjai also reveals that there is indication that some children preferred to work after finishing their middle school rather than continuing to high school level. In addition, geographical obstacles and availability of facilities strongly support this decision.

7.3 Impacts of Road Improvement

Road improvement has brought about a positive impact on the teaching and learning activities, even though it has not yet delivered a greater impact on community access to educational services. The interviews in schools that researchers visited revealed that improvement of the main road has made the trip to school easier for students and teachers. The teachers of the high school said that the journey between the school and their houses in the Sinjai region is now much quicker because the condition of the road has improved. Where it previously took up to 1 hour, it now takes 30 to 40 minutes. Both teachers and students share the same opinion. Their trip to school is now easier because the main road is no longer bumpy, narrow, and dusty. Those who usually use their own vehicle and those who take the public transport (*pete-pete*) said that they felt more comfortable when going to and leaving school.

On the other hand, road improvement has had a negative impact on the safety of the students. This affects not only students who drive their own vehicles but also those who cross the roads to go to school. The bad driving behavior that develops as the road condition improved has threatened the safety of the students (This point is discussed in more detail in Section 5.5.3).

²²146 students out of 997 middle school students, 10 students out of 250 first grade students of elementary schools, and 37 students out of 161 second grade of elementary schools.

VIII. SUMMARY AND CONCLUSIONS

Economic Development

The economies of Kabupaten Bulukumba and Kabupaten Sinjai have developed rapidly since the Baseline study in 2009. The EINRIP road improvement for the section ESS-05: Bulukumba – Tondong has made significant contribution to this development. The improved road has facilitated the growth of transport and trading sectors, followed by the growth of new business in trade, banking, manufacture, housing and property, as well as progress in the health and education sectors. The improved inter-districts connectivity also potentially enhanced economic partnership and cooperation between the districts of Sinjai, Bulukumba, Palopo, Luwu Timur, and Luwu Utara. In particular, the recent development of service and manufacturing industry in Bulukumba is helping it become a regional hub for service and manufacturing industries. The economy of Sinjai, on the other hand, is still predominantly agriculture with limited development in service and trade sectors.

The economic development of the Bulukumba and Sinjai has been accompanied by an increase in the overall HDI as well as the progress in all of the HDI components – life expectancy, years of schooling and income. It has also been accompanied by a decline in the poverty rate and the number of poor people.

Transport Sector

The EINRIP roads are now smoother and better aligned than before. This has led to reductions in vehicle operating costs, in particular fuel consumption and replacement parts, and in journey times. Traffic volumes have increased, in part because the improved road has diverted Makassar bound traffic from Sinjai and points north from other routes.

There has been an increase in the competition in the public transport sector, though this is not thought to be related to the road improvement. Passenger volumes have fallen, partly because of the increase in motorcycle and car ownership. However, the road improvement does appear to allow the operators to provide faster and more regular services, to the benefit of the passengers.

Local economy and Land-Use Development

The smoother road traffic has led to more intermediaries and companies from outside the region coming to the villages to buy the crops directly from farmers, which led to the increase of prices at the farmer level (farm-gate price). In addition, product quality is also better maintained because the products reach the destination faster. Particularly, in the shipment of cattle and fish products such as TTC (Tuna, Mackerel Tuna, and Skipjack Tuna) that is to be delivered to other *kabupaten* or exported via Makassar.

In addition, along the sides of the EINRIP roads in Bulukumba, lots of locally-owned businesses have appeared, mostly food stalls and mini markets. In two villages being surveyed, there are new establishment of various factories, such as cotton manufacturing, paint, and wood manufacturing factories, as well as rice drying industry supported by foreign investment.

The economic benefit of the improved road for Sinjai is less significant than Bulukumba, since there is no significant new business and investment. Nonetheless, Sinjai is now seeking to become an attractive destination for investment and has made efforts to cooperate with the surrounding

kabupaten/kota in developing the potential of each region, particularly regarding agriculture, fisheries, plantations, animal husbandry and tourism.

Livelihood and Social Life

The community of the sample village has enjoyed positive impact of the national road improvement. After the road improvement, some shops expanded their business and many villagers bought motor cycle since the road become smoother, which led to more senior high school students as well as junior high school students now go to school by using motor cycles. Some of the wealth are coming from clove farming that enjoyed higher price due to increase competition among intermediaries. However, the numbers of local intermediaries that bought local agricultural produce declined significantly due to increasing competition from traders from outside the village came.

Despite the road improvement, welfare levels in Bulo-Bulo declined in 2015 due to the declining rice harvest as well as plantation products - such as clove, pepper, cacao, rubber, nutmeg, and mangosteen – because of the dry season and pest attack. In addition to the lower production, the price of rubber also fell.

There are more mobile traders coming to the village. Mobile traders that used to use motor cycles is now using pick-ups to carry their merchandise. Better transportation facilities are seen as enabling families to connect better, as it is easier for children who have moved into the towns to visit their parents. There is some evidence that women's mobility has increased, as the road improvement has made the use of motorcycles easier, particularly at night.

Health and Health Services

The road improvement shortens the time needed to take a referral patient from *puskesmas* to the general hospital (RSUD) of Kabupaten Bulukumba – from a minimum of 45 minutes to only 25–30 minutes. Road improvement has also increased the number of visits by the health office of Kabupaten Bulukumba to monitor and provide guidance related to healthcare service. However, the major influence on access to healthcare service has been changes in government program that provide subsidy for medical cost – i.e. the health scheme transfer from Jamkesda (Regional Health Insurance) to BPJS Kesehatan (Healthcare and Social Security) which has smaller coverage. Nevertheless, the road improvement has facilitated wider choice of three health facility in Kecamatan Bulukumpa or go to other *kecamatan*—Rilau Ale.

Education

Improvement of the main road has made the trip to school easier for students and teachers that uses both public transport and their own vehicles. On the other hand, road improvement has had a negative impact on the safety of the students. This affects not only students who drive their own vehicles but also those who cross the streets to go to school. The bad driving behavior that develops as the road condition improved has threatened the safety of the students.

Road Safety

This social research has found that the increasing road accidents has become a major concern. In the span of 2009 and 2015, the number of road accidents in both Bulukumba and Sinjai has increased; although the severity tends to decline as reflected by decreasing proportion of fatalities and severe injury. Even though it cannot be fully associated with the EINRIP road improvement, the smoother road condition has led to more speeding and dangerous driving behavior. Other factors

causing the increase in road accident are poor understanding of traffic regulations, lack of awareness to use safety gears, under-aged driving of motorcycle, lack of community's understanding of road signs and safety, minimum road lighting, and several road signs and paraphernalia that are broken and have not been repaired.

Overall Impact

Overall, this social research study supports the view that the EINRIP improvements have been beneficial to Bulukumba and Sinjai. In particular, in addition to supporting economic development, the improved road has also significantly increased accessibility and better provision of public services, which resulted in the overall improvement of community welfare.

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