Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 6, 1145-1159
2025
Publisher: Learning Gate
DOI: 10.55214/25768484.v9i6.8055

The role of human resource management in improving food security and nutrition toward reducing stunting in Ngada district

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Abstract: Food security and nutrition are crucial issues that have a direct impact on people's welfare, especially concerning children's health, such as stunting. Stunting, which is a condition of growth failure in children due to chronic malnutrition, is one of the main indicators of nutritional problems that need serious attention in Indonesia. This study aims to analyze the role of human resource management in strengthening food security and nutrition to reduce stunting in Ngada Regency. The method used in this research is qualitative, with data collection techniques through literature study, where data is collected by compiling various relevant literature sources into appropriate topics and documents for the purposes of the research proposal. The results show that the role of human resources is crucial in creating a superior agricultural sector to improve food security and nutrition, which in turn reduces the stunting rate in Ngada Regency. Although there is currently a decrease in the stunting rate in Ngada Regency from 2021 to February 2024, this problem still requires serious handling. However, the welfare of farmers in Ngada Regency is still relatively low due to the inadequate quality of farmers' human resources. Therefore, efforts are needed to improve human resource management, such as through enhancing the quality of education and training in agriculture, increasing farmers' motivation and welfare, empowering farmer organizations through education and extension, and optimizing cooperation with various parties.

Keywords: *Agriculture, Food security, Human resource management, Nutrition, Stunting.*

1. Introduction

Stunting is a state of malnutrition associated with past nutrient inadequacies and is therefore a chronic nutritional problem. Stunting is still a common global problem in children under 5 years old. Stunting is a lack of height for age, characterized by delayed growth resulting in failure to reach normal height for the child's age.

Stunting can cause short-term and long-term impacts. Short-term impacts include increased mortality and morbidity while long-term impacts include short stature, decreased reproductive health, decreased learning capacity, and increased non-communicable diseases. Ultimately stunting has a short-term impact across generations.

Indonesia ranks 5th in the world with a high prevalence of stunting at 7.5 million children under five. According to the 2013 Basic Health Research, the prevalence of stunting was 37.2%, which increased compared to 2010 (35.6%) and 2007 (36.8%). The prevalence of stunting in Indonesia is higher than in other countries in Southeast Asia, such as Myanmar (35%), Vietnam (23%), and Thailand (16%).

Early childhood stunting in 2020 has increased when compared to 2019. The number of children affected by stunting in 2019 was 238 children while the number of children in Bajawa Sub-district, Ngada Regency affected by stunting in 2020 was 356 children, meaning that the number of stunting children in 2020 Bajawa Sub-district increased by 18 children with details of 58 children from the Surisina Health Center, 189 children from the Bajawa City Health Center and 109 children from the

History: Received: 31 March 2025; Revised: 20 May 2025; Accepted: 23 May 2025; Published: 14 June 2025
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Langa Health Center. Kelurahan Trikora is the village with the least number of stunted children with 1 child while Beiwali Village is the village with the most stunted children with 46 children. Thus, it can be concluded that the number of stunted children in Bajawa Sub-district in 2020 has increased when compared to 2019 [1].

The increase in the prevalence of stunting can be caused by many factors including household and community factors. Household factors can include food insecurity, inadequate sanitation, insufficient water availability, and low education of caregivers in the household. Meanwhile, community factors can include health services, economic status, income, and water and sanitation infrastructure.

Food is the main basic need for humans to survive. Household food security refers to the group's ability to fulfill access to food that is sufficient both economically and physically, safe and nutritious. Food security is the condition of food sufficiency and food access for everyone [2]. Low household food security (food insecurity) can lead to reduced intake of nutrients needed for child growth. Paudel's study in Nepal showed that food security is an important risk factor for stunting. Prof. Dr. Jamhari Hadipranoto, Professor of the Faculty of Agriculture, Gadjah Mada University in Pambudi and Djawahir [2] said: "Currently our nutritional problems are double, some are lack of calories and some are excess calories, even the latest data released by the National Widyakarya of Food and Nutrition shows Indonesia's stunting status, the stunting condition is still high".

Global Food Security Index (GFSI) data shows that Indonesia's food security index (59.2) in 2021 is still below Singapore's (77.4), Malaysia (70.1), Thailand (64.5), Vietnam (61.1), and the Philippines (60). Singapore is at 77.4 and is the highest in Southeast Asia [2]. Indonesia's low food security index cannot be separated from the quality of human resources (HR) in agriculture. To produce qualified and reliable farmers, who can make leaps of progress to compete in producing superior and competitive agricultural products, President Joko Widodo's administration through the Indonesian Ministry of Agriculture feels the need to reverse the qualifications of farmers who are currently considered less educated and skilled to become farmers who are educated, skilled, professional and able to implement agricultural modernization [3].

The agricultural sector plays a very important role in the Indonesian economy, and agriculture has become a top priority in development. When the new order of agriculture became a development goal, it became the government's main concern in the current era. Farmers are the most populous livelihood in Indonesia [4]. There is a problem that agriculture reduces poverty, but farmers remain poor. According to Warto in Yacoub and Mutiaradina [5] as a country with a relatively large area with promising agricultural land, villagers living in rural areas should live prosperously. However, in reality, this has never been the case because most of the people living in rural areas, especially farmers/farm laborers, are still poor.

Poverty is closely related to welfare, and the poor are not prosperous. Farmer income is one of the benchmarks for measuring farmer welfare, a benchmark for agricultural development [6]. Therefore, the agricultural system must be further improved, this is to improve the welfare of the farming community.

This goal will be realized if there is an overhaul of the vocational education and training system by reorienting vocational education and training towards demand-driven supported by the implementation of effective extension in line with the development of technological innovation and market orientation [7].

The aims and objectives of this research are to reveal the factors that influence the low interest of the workforce to work in the agricultural sector, including agricultural graduates; factors that cause Indonesia's food security index at the world level to be low; how the role of the family is very important for stunting prevention [8]; how to process local food products into nutritious food for children; and factors that can be used as strengths in improving Human Resources for the realization of food security and nutrition which have an impact on reducing stunting.

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 6: 1145-1159, 2025
DOI: 10.55214/25768484.v9i6.8055

2. Research Methods

This research uses qualitative methods, which aim to explore and provide an in-depth understanding of real problems. In contrast to quantitative methods that focus on collecting numerical data or implementing interventions, qualitative research is more oriented toward exploring phenomena [9]. The data collection technique used was a literature study, where researchers accessed previous research results through online publications, journals, and other scientific sources, as well as presentations from the Ngada Regency Government in the Rembuk Stunting Conference 3 meeting that discussed multi-stakeholder commitment to accelerate stunting reduction in Ngada [7].

According to Wuli [7] a literature review is a written summary that presents theories and information from journal articles, books, and other documents, both from the past and the present. This review also organizes the literature into topics that are relevant to research needs. Then after the data is collected the data analysis process begins with data reduction, where irrelevant or redundant information is filtered out, so that the researcher can focus on the important points. After that, the remaining data is presented in a more structured and understandable way. The final step is to draw conclusions based on the data analysis that has been carried out, which aims to answer the research objectives or questions clearly and in-depth.

3. Results and Discussion

Stunting is a nutritional status based on the PB/U or TB/U index where in the anthropometric standard of child nutritional status assessment, the measurement results are at the threshold (Z-Score) of <-2 SD up to -3 SD (short/stunted) and <-3 SD (very short / severely stunted). Stunting is a chronic malnutrition problem caused by insufficient nutritional intake for a long time due to feeding that is not in accordance with nutritional needs. Stunting can occur starting when the fetus is still in the womb and only appears when the child is two years old [10]. Stunting that occurs if not balanced with catch-up growth results in decreased growth, the problem of stunting is a public health problem associated with an increased risk of morbidity, mortality, and obstacles to growth both motor and mental. Stunting is formed by inadequate growth faltering and catch-up growth which reflects the inability to achieve optimal growth, it reveals that groups of toddlers born with normal weight can experience stunting if the fulfillment of further needs is not met properly [10, 11] .

The role of the family is very important to prevent stunting by paying attention to child nutrition from the womb [12]. Balanced nutritional intake should start from the womb until old age (Soedjatmiko). Nutritional intake of pregnant women supports the health of pregnant women and supports fetal growth and development, namely folic acid, protein, fiber, calcium, fat, milk, and carbohydrates [13]. Families must show their concern for pregnant women, mother-child health, and the problem of stunting [8]. The main focus of handling stunting is for pregnant women not to give birth to stunted children, and the second focus is for all newborns not to be stunted [14].

In Dewa, et al. [1] the causes of stunting consist of many factors that influence each other and the causes are different in each region [15]. Direct causes of stunting include poor nutrition and infectious diseases. Indirectly, stunting can be caused by factors such as food security, family, parenting, health services, and inadequate environmental health, including water and sanitation.

Based on data from the Ngada District Health Office (2024), the factors that cause stunting are family smoking (18%), not washing hands with soap (17%), not consuming protein (17%), short pregnancy spacing (9%), infants not consuming exclusive breast milk (9%), children not being cared for by biological parents (5%), and lack of access to clean water (0.7%).

Every family should be able to maintain local food security. Local food through feeding patterns is the ability of parents and families to provide time, attention, and support in providing food to their children. A healthy diet for toddlers must pay attention to the readiness of toddler meals, the content of the types of nutrients in the food, menu variations, food texture, and regularity of meal times [16].

Food availability is very important because it is one of the aspects of food security. Food security can be defined as the availability of food and a person's ability to access it [17]. If food security,

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 6: 1145-1159, 2025
DOI: 10.55214/25768484.v9i6.8055

especially family food security, is insufficient, then food intake is low and has an impact on a person's nutritional status [18].

Low food access can lead to health problems. The group most vulnerable to health and nutrition is children under five. This is because children have rapid growth. Toddler stunting is one of the chronic nutritional problems caused by low access and affordability to food. Food security and nutrition are a unity where nutrition is a very important element in improving the quality of life of the population. The prevalence of stunting in Indonesia according to SSGI 2021 data is 24.4%, which is still high than the government's target of 14% [19].

Problems in nutrition can be reflected in not achieving nutritional status. One of the root causes is unmet family food security. If it happens continuously, it can trigger toddlers to experience chronic malnutrition, which results in toddlers experiencing other nutritional problems [19].

Stunting in Bajawa Sub-district, Ngada Regency, for example, is caused by the lack of clean water use, parental care, children's nutritional intake, environmental hygiene, sanitation hygiene, and worms. The community tends to assume that children's height is caused by heredity and lack of awareness about the importance of attending posyandu [1].

Toddlers with very short nutritional status mostly have a household-level food security status in the medium-level food insecurity category. Meanwhile, toddlers with good or normal nutritional status have a food security status of food security.

From August 2023 to February 2024, there was a decrease in stunting from 902 children to 874 children, which was caused by 51 children recovering, 54 children graduating (>5 years old), and 10 children moving out of the district [20].

The data on the decline in stunting in Ngada Regency was obtained from the Ngada Regency Government's presentation on June 5, 2024, during the 3rd Rembuk Stunting Conference meeting: Strengthening Multi-Stakeholder Commitment to Accelerate Stunting Reduction Towards a Superior and Independent Generation of Ngada, which can be seen from the percentage of stunting reduction rates in 2021 (11.27%), 2022 (9.3%), 2023 (8.4%), and February 2024 (8.3%).

Some locations in Ngada Regency that have stunting cases include Puskesmas Inerie, Puskesmas Surisina, Puskesmas Langa, Puskesmas Ladja, Puskesmas Mangulewa, Puskesmas Lindi, Puskesmas Lengkosambi, Puskesmas Wolowio, Puskesmas Inelika Raya, and Puskesmas Soa.

Data on stunted toddlers from e-PPGBM in Ngada Regency, East Nusa Tenggara Province for the measurement period of February 2024 can be seen in the following table:

Edelweiss Applied Science and Technology
ISSN: 2576-8484
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DOI: 10.55214/25768484.v9i6.8055

Table 1.
Stunting Status of Children Under Five by Health Center and Village in Ngada District (Measurement Period: February 2024).

No	Health center		Village/Village		Advice	Total Under-Fives Measured	Nutritional Status (TB/U)				Total Stunted Children Under Five	% Little Stunting
							Very Short	Short	Normal	High		
1		*3*	*4*		*5*	*6*	*7*	*8*	*9*	*10*	*11=(7+8)*	*12=(11/6)*
1	1	AIMERE	1	FOA	56	56	2	2	52	0	4	7.1
	2		2	AIMERE TIMUR	108	108	1	5	102	0	6	5.6
	3		3	AIMERE	59	59	2	4	52	1	6	10.2
	4		4	KELIGEJO	25	25	1	2	22	0	3	12.0
	5		5	LEKOGOKO	52	52	1	7	44	0	8	15.4
	6		6	LEGELAPU	121	121	4	9	108	0	13	10.7
	7		7	BINAWALI	52	52	1	2	49	0	3	5.8
	8		8	KILA	34	34	0	1	33	0	1	2.9
	9		9	WAESAE	74	74	1	8	65	0	9	12.2
	10		10	MAWOKISA	99	99	3	7	89	0	10	10.1
	Number of health centers				680	680	16	47	616	1	63	9.3
2	11	WATUMANU	1	DARIWALI	39	39	1	1	37	0	2	5.1
	12		2	TIWORIWU	38	38	0	1	37	0	1	2.6
	13		3	WATUMANU	45	45	1	0	44	0	1	2.2
	14		4	BOWARU	19	19	1	2	16	0	3	15.8
	15		5	DARI WALI I	20	20	1	2	17	0	3	15.0
	16		6	TWOR IWU I	30	30	4	2	24	0	6	20.0
	17		7	TIWORIWU II	31	31	1	3	27	0	4	12.9
	18		8	MANUBHARA	44	44	2	4	38	0	6	13.6
	Number of health centers				266	266	11	15	240	0	26	9.8
3	19	DONA	1	NARUWOLO	38	38	1	5	32	0	6	15.8
	20		2	NENOWEA	22	22	2	4	16	0	6	27.3
	21		3	NARUWOLO I	37	37	1	3	33	0	4	10.8
	22		4	NARUWOLO II	23	23	1	0	22	0	1	4.3
	23		5	NIO LEWA	9	9	0	1	8	0	1	11.1
	24		6	BATAJAWA	36	36	1	7	28	0	8	22.2
	25		7	LEGERIWU	11	11	1	1	9	0	2	18.2
	26		8	WONGAWEA	7	7	0	2	5	0	2	28.6
	Number of health centers				183	183	7	23	153	0	30	16.4

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4	27	INERIE	1	PAUPAGA	57	57	0	1	56	0	1	1.8
	28		2	SEBOWULI	40	40	0	1	39	0	1	2.5
	29		3	INERIE	48	48	0	4	44	0	4	8.3
	30		4	WARUPELE II	33	33	0	0	33	0	0	0.0
	31		5	WARUPELE I	53	53	1	1	51	0	2	3.8
	32		6	KELITEI	39	39	0	1	37	1	1	2.6
	33		7	TIWURANA	25	25	0	2	23	0	2	8.0
	34		8	WAEBELA	52	52	2	3	47	0	5	9.6
	35		9	RUTO	58	58	0	6	52	0	6	10.3
	36		10	NAGE BARU	6	6	0	1	5	0	1	16.7
	37		11	ENABHARA	19	19	0	0	19	0	0	0.0
	Number of health centers				430	430	3	20	406	1	23	5.3
5	38	CITY	1	BAJAWA	154	154	1	4	149	0	5	3.2
	39		2	TANALODU	150	150	2	5	143	0	7	4.7
	40		3	KISANATA	76	76	0	0	76	0	0	0.0
	41		4	JAWAMEZE	71	71	0	5	66	0	5	7.0
	42		5	TRIKORA	146	146	1	3	142	0	4	2.7
	43		6	NGEDUKELU	182	182	2	4	176	0	6	3.3
	44		7	SUSU	122	122	3	9	110	0	12	9.8
	45		8	NGORANALE	111	111	2	8	101	0	10	9.0
	46		9	BOLONGA	71	71	1	7	63	0	8	11.3
	Number of health centers				1083	1083	12	45	1026	0	57	5.3
6	47	SURISINA	1	FAOBATA	147	147	4	3	140	0	7	4.8
	48		2	LEBIJAGA	172	172	1	7	164	0	8	4.7
	49		3	NARU	152	152	6	2	144	0	8	5.3
	50		4	PAPE	55	55	5	1	49	0	6	10.9
	51		5	BOWALI	55	55	1	1	53	0	2	3.6
	52		6	UBEDOLUMOLO I	67	67	1	3	63	0	4	6.0
	Number of health centers				648	648	18	17	613	0	35	5.4
	66	KOELODA	1	SARASEDU	26	26	1	3	22	0	4	15.4
	67		2	MALANUZA	124	124	5	6	113	0	11	8.9
	68		3	TODABELU	45	45	0	5	40	0	5	11.1
	69		4	MATALOKO	55	55	2	1	52	0	3	5.5
	70		5	SANGADETO	60	60	2	1	57	0	3	5.0
	71		6	SARASEDU I	48	48	2	1	45	0	3	6.3
	72		7	MALANUZA I	54	54	1	3	50	0	4	7.4

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9	73		8	ULU BELU	44	44	0	1	43	0	1	2.3
	74		9	EKO ROKA	60	60	1	0	59	0	1	1.7
	75		10	WAE IA	81	81	0	5	76	0	5	6.2
	76		11	BODOSARE	23	23	1	3	19	0	4	17.4
	77		12	DOLUPORE	45	45	0	4	41	0	4	8.9
	78		13	KELIMOLO	20	20	0	2	18	0	2	10.0
	79		14	TIWU TODA	39	39	2	5	32	0	7	17.9
	Number of health centers				724	724	17	40	667	0	57	7.9
	80		1	RATOGESA	49	49	0	3	46	0	3	6.1
	81		2	DADAWEA	39	39	0	3	36	0	3	7.7
	82		3	WERE I	100	100	0	3	97	0	3	3.0
10	83	RADABATA	4	RADABATA	80	80	1	2	77	0	3	3.8
	84		5	RADABATA I	23	23	1	0	22	0	1	4.3
	85		6	WOGO	64	64	1	10	53	0	11	17.2
	86		7	WERE	76	76	1	2	73	0	3	3.9
	87		8	WERE IV	44	44	0	3	41	0	3	6.8
	Number of health centers				475	475	4	26	445	0	30	6.3
	53		1	BEJA	38	38	0	3	35	0	3	7.9
	54		2	BOMARI	63	63	0	3	60	0	3	4.8
	55		3	UBEDOLUMOLO	58	58	1	8	49	0	9	15.5
	56		4	BORANI	80	80	1	5	74	0	6	7.5
7	57	LANGA	5	LANGAGEDHA	51	51	0	1	50	0	1	2.0
	58		6	BELA	66	66	0	6	60	0	6	9.1
	59		7	UBEDOLUMOLO II	69	69	1	3	65	0	4	5.8
	60		8	LANGAGEDHA I	28	28	0	1	27	0	1	3.6
	61		9	BORADHO	57	57	0	5	52	0	5	8.8
	62		10	NGADHAMANA	45	45	2	0	43	0	2	4.4
8	Number of health centers				555	555	5	35	515	0	40	7.2
	63	WOLOWIO	1	BEIWALI	112	112	8	19	85	0	27	24.1
	64		2	WAWOWAE	92	92	5	16	71	0	21	22.8
	65		3	MUKU FOKA	38	38	2	5	31	0	7	18.4
	Number of health centers				242	242	15	40	187	0	55	22.7
	88		1	WERE II	50	50	0	1	49	0	1	2.0
	89	LADJA	2	WERE III	56	56	2	7	47	0	9	16.1
	90		3	KEZEWEA	96	96	1	2	92	1	3	3.1

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11	91		4	NIRMALA	83	83	1	0	82	0	1	1.2
	92		5	TAKATUNGA	59	59	2	4	53	0	6	10.2
	93		6	SADHA	47	47	3	2	42	0	5	10.6
	94		7	RADAMASA	46	46	0	1	45	0	1	2.2
	95		8	TAKATUNGA I	17	17	0	0	17	0	0	0.0
	96		9	SADHA I	18	18	0	0	18	0	0	0.0
	97		10	KEZEWEA I	27	27	0	0	27	0	0	0.0
	98		11	WERE V	35	35	1	6	28	0	7	20.0
	99		12	WERE VI	39	39	1	4	34	0	5	12.8
	Number of health centers				573	573	11	27	534	1	38	6.6
12	100	BOBA	1	BAWARANI	38	38	0	4	34	0	4	10.5
	101		2	WOGOWELA	23	23	0	1	22	0	1	4.3
	102		3	WATUSIPI	17	17	1	1	15	0	2	11.8
	103		4	BOBA	20	20	1	2	17	0	3	15.0
	104		5	BOBA I	38	38	0	5	33	0	5	13.2
	105		6	BOBAWA	11	11	0	2	9	0	2	18.2
	Number of health centers				147	147	2	15	130	0	17	11.6
13	106	MANGULEWA	1	BEA PAWE	59	59	0	6	53	0	6	10.2
	107		2	WATUNAY	46	46	2	4	40	0	6	13.0
	108		3	RAKATEDA I	62	62	0	3	59	0	3	4.8
	109		4	RAKATEDA II	46	46	3	4	39	0	7	15.2
	110		5	DIZI GEDHA	53	53	1	7	45	0	8	15.1
	111		6	SOBO	58	58	1	3	54	0	4	6.9
	112		7	RAKALABA	47	47	0	2	45	0	2	4.3
	113		8	MANGULEWA	47	47	0	3	43	1	3	6.4
	114		9	TUREKISA	113	113	2	7	104	0	9	8.0
	115		10	RAKALABA 1	35	35	0	1	34	0	1	2.9
	116		11	SOBO 2	30	30	2	3	25	0	5	16.7
	117		12	BOPOMA	46	46	0	2	43	1	2	4.3
	Number of health centers				642	642	11	45	584	2	56	8.7
14	118	WATUKAPU	1	BOWADO	44	44	2	7	35	0	9	20.5
	119		2	INEGENA	35	35	1	2	32	0	3	8.6
	120		3	WATUKAPU	75	75	0	7	68	0	7	9.3
	121		4	GENAMERE	66	66	0	6	60	0	6	9.1
	122		5	NGINAMANU	43	43	2	6	35	0	8	18.6

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				SELATAN								
	Number of health centers				263	263	5	28	230	0	33	12.5
15	123	ULUWAE RAYA	1	WAEWEA	32	32	0	1	31	0	1	3.1
	124		2	ULUWAE	68	68	0	2	66	0	2	2.9
	125		3	ULUWAE I	59	59	0	3	56	0	3	5.1
	126		4	ULUWAE II	24	24	0	0	24	0	0	0.0
	127		5	HEAWEA	34	34	0	0	34	0	0	0.0
	128		6	NGINAMANU BARAT	40	40	0	0	40	0	0	0.0
	Number of health centers				257	257	0	6	251	0	6	2.3
16	129	INELIKA RAYA	1	INELIKA	57	57	1	2	54	0	3	5.3
	130		2	WOLOLIKA	69	69	2	2	65	0	4	5.8
	131		3	NABELENA	107	107	2	5	100	0	7	6.5
	132		4	TURA MURI	63	63	2	5	56	0	7	11.1
	133		5	MELI WARU	41	41	1	2	38	0	3	7.3
	Number of health centers				337	337	8	16	313	0	24	7.1
17	134	WAEPANA	1	PIGA	54	54	2	4	48	0	6	11.1
	135		2	MASUMELI	53	53	6	7	40	0	13	24.5
	136		3	SESO	73	73	3	5	65	0	8	11.0
	137		4	WAEPANA	58	58	2	3	53	0	5	8.6
	138		5	NGABHEO	42	42	2	4	36	0	6	14.3
	139		6	LIBUNIO	49	49	1	6	42	0	7	14.3
	140		7	PIGA I	69	69	7	7	55	0	14	20.3
	141		8	WAEPANA I	46	46	3	11	32	0	14	30.4
	Number of health centers				444	444	26	47	371	0	73	16.4
18	142	SOA	1	Tarawaja	39	39	0	5	34	0	5	12.8
	143		2	Loa	34	34	1	4	29	0	5	14.7
	144		3	Mengeruda	61	61	1	4	56	0	5	8.2
	145		4	Masu Kedhi	52	52	0	5	47	0	5	9.6
	146		5	Sobo I	46	46	2	3	41	0	5	10.9
	147		6	Tarawali	60	60	4	9	47	0	13	21.7
	148		7	Bogo Boa	59	59	1	8	50	0	9	15.3
	149		8	Lokaweka	32	32	1	4	27	0	5	15.6
	Number of health centers				383	383	10	42	331	0	52	13.6
	150		1	Sambinasi Tengah	10	10	0	0	10	0	0	0.0

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19	151	RIUNG	2	Latung Barat	19	19	0	1	18	0	1	5.3
	152		3	Ite Jaya	44	44	0	1	43	0	1	2.3
	153		4	Kota Raja	24	24	0	3	21	0	3	12.5
	154		5	Tadho Barat	18	18	0	0	18	0	0	0.0
	155		6	Benteng Tengah	80	80	0	4	76	0	4	5.0
	156		7	Nangamese	52	52	0	4	48	0	4	7.7
	157		8	Latung	19	19	0	0	19	0	0	0.0
	158		9	Sambinasi	16	16	0	1	15	0	1	6.3
	159		10	Sambiasi Barat	19	19	0	1	18	0	1	5.3
	Number of health centers				301	301	0	15	286	0	15	5.0
20	160	Rawangkalo	1	Taen Terong	24	24	0	0	24	0	0	0.0
	161		2	Rawangkalo	33	33	0	2	31	0	2	6.1
	162		3	Wangka	84	84	3	0	81	0	3	3.6
	163		4	Rawangkalo I	56	56	2	2	52	0	4	7.1
	164		5	Wangka Selatan	85	85	0	1	84	0	1	1.2
	165		6	Taen Terong I	23	23	0	0	23	0	0	0.0
	166		7	Taen Terong Ii	31	31	1	1	29	0	2	6.5
	167		8	Rawangkalo Ii	35	35	1	4	30	0	5	14.3
	168		9	Wangka Barat	30	30	0	1	29	0	1	3.3
	169		10	Wakamanga	57	57	1	1	55	0	2	3.5
	Number of health centers				458	458	8	12	438	0	20	4.4
21	170	LENGKOSAMBI	1	Lengkosambi	18	18	0	1	17	0	1	5.6
	171		2	Tadho	26	26	1	1	24	0	2	7.7
	172		3	Lengkosambi Timur	42	42	1	2	39	0	3	7.1
	173		4	Lengkosambi Barat	61	61	1	3	57	0	4	6.6
	174		5	Lekosambi Utara	33	33	1	0	32	0	1	3.0
	175		6	Lengkosambi Tengah	26	26	0	1	25	0	1	3.8
	176		7	Daya	30	30	1	1	28	0	2	6.7
	177		8	Tadho Timur	36	36	1	1	34	0	2	5.6
	178		9	Tadho Tengah	46	46	0	1	45	0	1	2.2
	Number of health centers				318	318	6	11	301	0	17	5.3
	179	Maronggela	1	Wolomeze	75	75	0	3	72	0	3	4.0
	180		2	Ria	59	59	2	0	57	0	2	3.4
	181		3	Lanamai	36	36	1	1	34	0	2	5.6
	182		4	Ngara	40	40	0	0	40	0	0	0.0

Edelweiss Applied Science and Technology
ISSN: 2576-8484
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22	183		5	Ria I	41	41	0	2	39	0	2	4.9
	184		6	Wolomeze I	51	51	1	1	49	0	2	3.9
	185		7	Lanamai I	54	54	0	1	53	0	1	1.9
	186		8	Wolomeze Ii	48	48	0	0	48	0	0	0.0
	187		9	Ngara I	32	32	0	0	32	0	0	0.0
	188		10	Wate	32	32	0	1	31	0	1	3.1
	189		11	Kembang	13	13	0	1	12	0	1	7.7
	190		12	Lanamai Ii	14	14	0	1	13	0	1	7.1
	191		13	Niliwarusae	7	7	0	0	7	0	0	0.0
	Number of health centers				502	502	4	11	487	0	15	3.0
23	192	Lindi	1	Benteng Tawa	48	48	4	5	39	0	9	18.8
	193		2	Benteng Tawa I	22	22	1	4	17	0	5	22.7
	194		3	Benteng Tawa II	39	39	2	4	33	0	6	15.4
	195		4	Benteng Tawa III	22	22	0	0	22	0	0	0.0
	196		5	Benteng Tawa IV	28	28	2	2	24	0	4	14.3
	197		6	Benteng Tawa V	30	30	3	4	23	0	7	23.3
	Number of health centers				189	189	12	19	158	0	31	16.4
24	198	Natarandang	1	Turaloa	49	49	3	2	44	0	5	10.2
	199		2	Mainai	15	15	0	1	14	0	1	6.7
	200		3	Denatana	32	32	0	4	28	0	4	12.5
	201		4	Nginamanu	114	114	6	16	92	0	22	19.3
	202		5	Mulu mese	12	12	0	1	11	0	1	8.3
	203		6	Lari laki	50	50	3	11	36	0	14	28.0
	204		7	Wue	56	56	2	3	51	0	5	8.9
	205		8	Denatana timur	36	36	1	5	30	0	6	16.7
	206		9	Turaloa timur	21	21	1	2	18	0	3	14.3
	Number of health centers				385	385	16	45	324	0	61	15.8
	Total Ngada district				10485	10485	227	647	9606	5	874	8.3

Source: Ngada District Health Office (Measurement Data February 2024)

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 6: 1145-1159, 2025
DOI: 10.55214/25768484.v9i6.8055

The decline in the stunting rate in Ngada Regency is inseparable from the government's attention to improving the welfare of the community by adhering to the principles: toddlers under the age of 2 can be cured, prevention is better than recovery, and all newborns should not fall into stunting.

The National Strategy for Accelerating Stunting Reduction Based on Presidential Regulation No.72 of 2021, among others: reducing the prevalence of stunting, improving the quality of family life preparation, ensuring the fulfillment of nutritional intake, improving parenting, increasing access and quality of health services, and increasing access to drinking water and sanitation. The target groups of this stunting reduction strategy, namely: teenagers, brides-to-be, pregnant women, breastfeeding mothers, and children aged 0-59 months.

However, some of the problems that are still faced to date, resulting in the persistence of stunting in Ngada Regency are: the provision of anti-stunting nutrition is only given to stunted infants, making it more likely that normal infants will experience stunting and focusing more on supplementary feeding.

The welfare of farmers in Ngada Regency is still relatively low, as the composition of Ngada's economy is still dominated by the agricultural sector at 35.02%. Even so, the figures published by BPS NTT in 2023 placed Ngada in third place in terms of the smallest percentage of poor people in NTT Province, behind Kupang City and East Flores (Introductory Speech to the Ngada Regency Central Statistics Agency [21]). One of the factors that can be identified as the cause of farmers' low welfare is the lack of quality of farmers' human resources [22]. Therefore, human resource management efforts are needed to overcome this problem [23].

Research Wuli [7] shows that one of the obstacles facing the agricultural sector in Indonesia is still the limited quality of human resources (HR) in agriculture. The low level of welfare of farmers in Indonesia is caused by their inadequate abilities, such as managerial skills, weak bargaining power, limited access to capital and information, and low levels of education.

One of the reasons for the low interest of the labor force to work in the agricultural sector is the lack of income earned. Agricultural graduates prefer to work in other sectors that are promising in terms of income and welfare. Many of them have side businesses outside the non-agricultural sector [7]. The younger generation's interest in agriculture is declining because they think that being a farmer is not only less economically promising but also considered a less prestigious job, so it is a big task for the role of human resources management to improve the welfare of farmers, especially in Ngada Regency, East Nusa Tenggara Province, which has potential in agriculture [23].

According to Wuli [7] the Rome Declaration on World Food Security and the 1996 World Food Summit confirmed that food security is realized when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. The sector that is most relied upon and has a strategic role in food provision is the agricultural sector. Food availability is not only limited to its quantity and distribution but also guarantees the livability of the population. Therefore, the issues of self-reliance, food availability, and food affordability are closely related to the capacity of farmers to run their businesses. One of the obstacles faced by the agricultural sector is the limited quality of human resources in agriculture.

Realizing the importance of superior agricultural human resources [24] the Indonesian Ministry of Agriculture through the Ministry of Agriculture Strategic Plan 2020-2024 elaborates on national development in the 2005-2025 RPJPN in the vision and mission of President Jokowi which is simplified into five directions to be achieved within five years (2020-2024). The first point of the five presidential directives is human resource development to create hardworking human resources (workers) who are dynamic, productive, skilled, and mastering science and technology supported by industrial cooperation and global talents. The other four directives are infrastructure development, simplification of regulations, simplification of bureaucracy, and economic transformation.

In Wuli [25] there is a vision. One of the mission points of Ngada Regency for 2021-2024 is the realization of a superior, independent, and cultured Ngada community focused on environmentally

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 6: 1145-1159, 2025
DOI: 10.55214/25768484.v9i6.8055

friendly agriculture and tourism. Meanwhile, one of the missions mentions regional economic development through key sectors, including agriculture, livestock, fisheries, and tourism, with attention to the environment. As the vision and mission emphasize that the agricultural sector is one of the strategic roles in the development of Ngada Regency's economic development agenda, the selection of the sector as one of the key sectors in economic development reflects the important role that agriculture plays in contributing to local economic growth.

Ngada Regency has a large area of agricultural land, abundant natural resources, and climate-supportive agriculture. Increasing the potential for community welfare through the agricultural sector such as South Golewa District is one of the sub-districts in Ngada Regency, East Nusa Tenggara Province which has a tropical climate and is located at an altitude of 0-750 meters above sea level. South Golewa District has agricultural potential in food commodities, horticulture, and plantations. The agricultural potential of South Golewa Ngada Regency is the largest contributor to agriculture. Leading commodities spread across villages in the South Golewa sub-district include rice, corn, bananas, cocoa, and candlenuts [26]. While Wolomeze Sub-district is part of the Ngada Regency Region, Wolomeze Sub-district has strategic potential in the agricultural sector, especially rice, corn, and horticultural crops [27].

Food, especially staple foods, plays a very important role in Indonesia. Most staple foods in Indonesia such as cereals, which include rice, corn, and wheat flour, have a major impact on people's daily lives. Of the three, rice is the most dominant food choice for the population. Rice is one of Indonesia's important and widely cultivated food crop commodities because it is the staple food of most Indonesians. For Indonesians, rice is one of the primary needs because it is a source of energy and carbohydrates [28]. With this opportunity, it should be able to contribute to the welfare of farmers.

As an implementation of President Jokowi's vision: "The realization of an advanced Indonesia that is sovereign, independent and has a personality based on Gotong Royong", agricultural and food development is directed at realizing advanced, independent, and modern agriculture to increase economic growth and lead to an increase in the welfare of farmers which leads to strengthening food sovereignty and security [7].

Advanced agriculture can be defined as improving the quality of agricultural human resources with managerial skills through the application of human resource management (HRM) that can increase work productivity and welfare. Advanced agriculture is also characterized by real and effective community participation in agricultural development.

In today's digital era, there are wide opportunities for millennials to take over the agricultural sector, starting from utilizing technology and information in various agricultural activities such as planting, and seed selection, to sales. Supported by new innovations to tractor machines that can facilitate rice planting. Millennial farmers also do not need to be afraid of crop failure, because now there are start-up applications in monitoring pests and climate weather so that losses will decrease. But on the other hand, there needs to be assistance from the government, of course, from the discussion above there is something that facilitates the needs of farmers. Such as access to capital which is a confusion for novice farmers. One of the activities of millennial farmers is training on information systems and online-based marketing, which is also one part of the program to improve the human resources of farmers, especially millennial farmers [7]. The younger generation is key, and modern agriculture is the solution to attracting the younger generation to get involved in the agricultural business. Make a movement of change from millennial farmers themselves, change the view of the farming profession. The utilization of digitalis will certainly be very helpful in working.

The e-PPGBM Name by Address data shows the nutritional status and growth status of toddler 'T'. 'T' toddlers are defined as toddlers with age growth but not weight gain.

Several strategies can be adopted to improve human resource management to create superior agriculture for food security. First, emphasis needs to be placed on improving the quality of education and training in agriculture. In addition, an important focus is placed on improving the motivation and welfare of farmers. Another strategic step is to empower farmer organizations through education and

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 6: 1145-1159, 2025
DOI: 10.55214/25768484.v9i6.8055

extension. Finally, optimizing the cooperation of various parties, including the government, the private sector, and the community, is also important in improving the management of agricultural human resources [23].

With efforts to improve human resource management to create superior agriculture in improving food security and nutrition, the stunting rate in Ngada Regency has decreased.

The implementation of an integrated strategy is expected to achieve optimal food security agriculture as an economic driver and improve the welfare of farmers. Enhanced cooperation between parties will ensure efficient utilization of resources, creating a competitive, independent, and modern agriculture. Thus, sustainable food security development can be realized in Ngada Regency, East Nusa Tenggara Province.

4. Conclusions

Human resources in the agricultural sector play an important role in creating a superior agricultural sector to improve food security and nutrition, ultimately contributing to the reduction of stunting in Ngada Regency. In Bajawa Subdistrict, Ngada Regency, stunting occurs due to several factors such as lack of access to clean water, suboptimal parenting, inadequate nutritional intake of children, low environmental hygiene, poor sanitation, and worm infections. So, overcoming the causal factors related to food insecurity and inadequate nutritional intake requires improving the quality of human resources in related sectors. However, the agricultural sector in Indonesia still faces challenges in terms of the quality of human resources. The low welfare of farmers is often caused by inadequate capabilities, including managerial skills, weak bargaining power, limited access to capital and information, and low levels of education. To achieve optimal food security and make agriculture the driving force of the economy, the implementation of integrated strategies is needed such as improving the quality of education and training in agriculture, increasing the motivation and welfare of farmers, empowering farmer organizations through education and extension, and optimizing cooperation with various parties. Thus, sustainable food security can be realized in Ngada Regency, East Nusa Tenggara Province.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 6: 1145-1159, 2025
DOI: 10.55214/25768484.v9i6.8055