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Research article

History of some diseases and pests in Eastern Gojjam from 1941 to 1991

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Abstract: *Eastern Gojjam is historically known as 'Gojjam Proper' consisting of the three awuraja administrations of Debre Markos, Bichena, and Motta of Gojjam Governorate General or the later Gojjam Provincial Administration from 1941-1991. Eastern Gojjam is a potential agricultural area that has long suffered from diseases and pests. These two problems were the dominant factors that challenged the productivity of the region. Considering the frequency of diseases and pests in eastern Gojjam from 1941 to 1991, I investigated diseases and pests in eastern Gojjam from 1941 to 1991 to determine the responses of the government and to examine the major problems in the prevention and control of diseases and pests. In this study, I consulted archival materials at Debre Markos University about diseases such as Tesibo, cholera, malaria, and small-pox. Moreover, I studied the spread and preventive measures against pests like locusts and temch which frequently affected the people of East Gojjam from 1941 to 1991. The government tried to use its full capacity to utilize the available resources. Providing mobile medical services following the outbreak of diseases and pests was the main preventive and control mechanism. Shortage of skilled manpower, insufficient and poor health infrastructure, poor logistics and supplies, old tradition and wrong perceptions, and transportation and communication problems were among the major problems that challenged the prevention of diseases. On the other hand, the local people employed their traditional coping mechanisms in the prevention of diseases and pests in the absence of modern medical services.*

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1. Introduction

Gojjam is a semi-peninsula encircled by the Abay River and Lake Tana, including geographically interrelated regions of East Gojjam ('Proper Gojjam'), Damot, Agew Midir, and Mettekel. Historically, before the Gonderian period, Gojjam was an autonomous territory establishing its kingdom. Starting from the 17th century to the mid-18th century, Gojjam was under the rule of officials directly assigned by the Gonderian kings. From the mid-18th century, descendants of Wolete-Israel and Yosediq established their hereditary rule over Gojjam which

lasted until 1932.[1] In the first half of the 19th century, because of internal rivalry within the ruling family of Gojjam following the death of *Ras* Hailu I in 1795, Gojjam was divided into Gojjam (Eastern Gojjam or 'Proper Gojjam'), Damot, and Agew Midir.[2] The unity and strength of Gojjam were subsequently restored by the rule of *Ras* Adal Tessema, the later *Nigus* TekleHaymanot (r. 1874 to 1901).[3] In 1932, the last hereditary ruler of Gojjam, *Leul Ras* Hailu Tekle Haymanot, was replaced by the appointee of Emperor Haile Selassie, *Ras* Imiru Haile Selassie, and Gojjam became unified and lost its autonomous status.[4] After the five years of Italian occupation, Gojjam continued under the control of the central government as "Gojjam Governorate General," which was divided into seven *awuraja* administrations. Eastern Gojjam consisted of the three *awurajas* Motta, Debre Markos, and Bichena.[5]

Eastern Gojjam is bordered by the Abay River in the east and southeast and the Temicha River in the east. Traditionally, the area is divided into four agro-climatic regions: *Wurch* (Hail), *Dega* (Highland), *Woyina Dega* (Midland), and *Qolla* (lowland). The topography of the region varies from Choke Mountain whose height is 4200 meters above sea level to the lowest point of the Abay Gorge.[6] In this paper, I examined the history of diseases and pests in eastern Gojjam from 1941 to 1991.

Without a healthy workforce and environment, productivity and sustainable development are unthinkable. For countries such as Ethiopia, which has mainly an agrarian society and which is directly dependent on human power and nature, the health of the society as well as the wellbeing of the environment, significantly affects the productivity of the sector.[7] Before famines and shortage of food in Ethiopia, diseases, droughts, and pests such as locusts were common. Problems such as these directly or indirectly challenge the productivity of society and cause famine and loss of life. In this regard, Richard Pankhurst stated that "… harvest failures,

[1] Habtamu Mengistie, "Lord, Zega and Peasants in Eastern Gojjam C. 1767 to 1901," (AAU MA Thesis 2003) p.1; Habtamu Mengistie, "Land Tenure and Agrarian Social Structure in Ethiopia, 1636-1900" (Ph.D. Dissertation, University of Illinois, 2011), p. 145; Shimeles Lewoye, "Environmental History of Çoqé Mountain During The 2oth Century," (MA Thesis, Bahir Dar University, September 2015), pp. 10-11.

[2] Fentahun Birhane, "Gojjam 1800-1855" (Senior Essay, AAU (Haile Sellasie I University, 1973), p.1.

[3] Shimeles, p.11

[4] Ibid. p. 12.

[5] Ibid. p.13; Habtamu, "Lord, Zega, and Peasants in Eastern Gojjam, p. 1.

[6] Habtamu, "Lord, Zega and Peasants in Eastern Gojjam, pp.2-3.

[7] Daniel Teferra, "Subsistence Production Behavior and Famine in Ethiopia," *Northeast African Studies*, 1987, Vol. 9, No. 2 (1987), p.23.

outbreaks of cattle pest, attacks by locusts and the ravages of war led to occasional famines of acute proportions."[8]

Diseases and pests in Ethiopia have a long history. Ethiopian manuscripts as well as the records of foreign travelers and missionaries recorded valuable information about diseases and pests in the medieval period of Ethiopia. Such pieces of evidence also show the history of diseases and pests in 19th century Ethiopia. Mostly, in the history of northern Ethiopia evidence from travelers' and missionaries' accounts is available because of their direct contact with the outside world. The number of travelers and missionaries visited Gojjam, which is the central part of Ethiopia, is insufficient compared to that in other northern districts of Ethiopia such as Begemidir and Tigray. However, the scanty accounts provided valuable information about diseases and pests in Gojjam.

A Portuguese missionary in the 16th century remarked about locust devastation in Gojjam.[9]Alfonso Mendes, a Catholic missionary who visited Gojjam in 1625 and 1626, faced a locust invasion. According to this source, there were fewer locust attacks in this province than the Northern provinces. Another missionary, Almeida, also observed small worms of locust that affected the area insignificantly.[10] In 1627, Almeida observed another locust swarm in Gojjam. While the locust caused great damage in the northern part of the country, particularly in Tigray, its effect on Gojjam was less because of the small size of the swarm.[11]

However, there was less damage caused by a swarm of locusts in Gojjam than in Tigray in the seventeenth century.[12] Locusts rose from the Red Sea region in 1624, 1633, 1634, and 1635 caused severe damage in Gojjam. A shortage of fodder occurs as a result of locust damage which led to famine and many animals such as cattle, sheep, and goats starved.[13] The British traveler,

[8]Richard Pankhurst, "Some Factors Influencing the Health of Traditional Ethiopia," *Journal of Ethiopian Studies*, Vol. 4, No. 1 (JANUARY 1966), p.31.

[9] Francisco Alvarez, *The Prester John of the Indies*, trans, and ed. C.F. Beckingham and G.W.B. Huntingford, (London: The Hakluyt Society, 1961), p. 136.

[10] Richard Pankhurst, "The History of Famine and Pestilence in Ethiopia prior to the Founding of Gondar," *Journal of Ethiopian Studies*, Vol. 10, No. 2 (JULY 1972), p.55; Manuel de Almeida, *Some Records of Ethiopia 1593-1646*, trans, and ed. C F. Beckingham and G.W.B. Huntingford, (London: The Hakluyt Society ', 1954), p.46.

[11]Pankhurst, "The History of Famine and Pestilence, pp.57.

[12] Pankhurst, "Some Factors Depressing," p. 62.

[13]Ibid., pp. 62-63

Nathanael Pears, stated that locust and smallpox rose in northern Ethiopia in 1811. According to Pears, the disease that extended up to Gojjam was severe and claimed the lives of people.[14]

In June 1953, before the outbreak of the war between *Ras* Ali II and *Ras* Kassa, there was an epidemic in Gojjam. *Aleqa* Lema who went to the monastery of Dima Giorgis was infected by this epidemic. According to *Aleqa* Lema he became sick for three days. In addition to him, the church students of Dima Giorgis were infected by the disease.[15] A small-pox epidemic that appeared in 1886 throughout Ethiopia also affected Gojjam.[16]A cattle epidemic from northern Ethiopia extended to Gojjam in September 1888. This epidemic caused the Great Famine which lasted from 1889-1892 in Ethiopia. Like the rest of northern Ethiopia, Gojjam was seriously affected by famine and diseases after it. According to *Aleqa* Lema, before this, Emperor Yohannes IV (r. 1872-89) looted Gojjam, which worsened the problem.[17] In 1928-29, the northern part of Gojjam was attacked by locust invasion, which devastated every green plant and grass.[18]All these events revealed that diseases and pests had a long history in Gojjam.

In this study, I attempted to identify some types of diseases and pests common in eastern Gojjam during the period under study. In addition, I examined the challenges of preventing diseases and pests and coping mechanisms employed both by the government and the local community from 1941 to 1991. Methodologically, I consulted archival materials from Debre Markos University. In addition, traveler accounts and secondary sources were also used to fill the gaps of archives and to construct the background. But the study was conducted in the period of Covid-19 and I could not consult informants in the study area.

2. Diseases in Eastern Gojjam, 1941 to 1991

Diseases such as *tesibo*, malaria, cholera, and smallpox were common in eastern Gojjam during the period under study. Mostly, the outbreak of these epidemics was occasional. There are so many archival materials that confirm this fact. However, the sources mostly focused on

[14]J. J. Halls (ed.), *The Life And Adventures of Nathaniel Pearce: Written By Himself, During A Residence In Abyssinia, From The Years 1810 To 1819; Together With Mr. Coffin 'S Account of His Visit to Gondar,* Vol, I, (London, 1831), pp. 88-91.

[15]መንግሰቱ ለማ, መጽንፈ ትዝታ ዘኣለቃ ለማ ታይሉ ወልደ ታሪክ, (NP. 1959 E.C), P. 83.

[16]Richard Pankhurst, "The History and Traditional Treatment of Smallpox in Ethiopia, *"Medical History*, Vol. 9.Issue 4, (October 1965), *p. 346.*

[17]መንግሰቱ, pp. 100-101.

[18] Pankhurst, "Some Factors Depressing…,"p. 67.

information about the outbreak of diseases and the request for manpower and medicine used for the treatment of patients. On the other hand, the damage caused by diseases is mostly described qualitatively rather than quantitatively. Instead of stating the number of patients, deaths, and treated patients, historians used words such as ከፍተኛ ህዝብ ታሞ ስልተኛ (many people were sick and bed-ridden) ብዙ ህዝብ ስለትጎዳ (many people were affected) and the like. Such descriptions made it difficult to understand the extent of the damage. Sometimes even the types of diseases were not identified. In particular, the letters written by local governmental officials for the *woreda* and *awuraja* administrations used the general term በሽታ (disease). Although there were several epidemic cases in the period under study, I tried to selectively present here the most influential cases.

An outbreak of cholera in Debre Markos *Awuraja,* Gozamen *Worede,* Leqleqita *Qebelie* in 1955 had caused the loss of life. *Shaleqa* Getachew Habte Wold, head of Gojjam Governorate General Police, in his letter to the governorate general administrative office, stated that the disease caused heavy damage to the local people. He requested immediate health services in the area.[19]The year 1958 was a year of epidemic in Gojjam in general and eastern Gojjam in particular. The rise of epidemics in other governorate generals troubled the supply of medicine and health officers at a national level. As a result, the Ministry of Public Health Department of Anti-Epidemic Service assigned only two health officers, namely *Ato* Ali Ahmed and *Ato* Kiros Workineh, for Gojjam Governorate General. In addition, the department advised the general governorate to prioritize the most infected areas.[20] According to the governor of Debre Marqos *Awurajja,* in September 1958, an epidemic in Machakel *Woreda* killed 175 patients. In November 1958, the *tesibo* epidemic claimed the lives of 136 patients in Motta *Awuraja,* Goncha Sub-*woreda*.[21]At the same time, a letter written to *Ato* Getahun Tessema, minister of Public Health Care, stated that 204 patients died in the three *woredas* of Debre Markos *Awuraja*. The letter did not identify the type

[19]DMUAC, folder No.ዞን/አስ/0080, file No. 456, For Honorable Gojjam Governorate General Office, 9/11/1947E.C.

[20]DMUAC, folder No.ዞን/አስ/0080, File No, 456, For Honorable *Dejazmach* Sebsbie Shiferaw: governor of Gojjam Governorate General, Ref. No. ተ/ 543/78/25, Date, 13/3/1951 E.C

[21]DMUAC, folder No.ዞን/አስ/0067, file No, ሙ.አ.14, For Honorable Gojjam Governorate General Office, 26/2/1951E.C; folder No.ዞን/አስ/0080, File No, 456, For honorable *Ato* Getahun Tesema: Public Healthcare Minister, Ref. No. 3044/1791/44, Date, 26/2/1951 E.C.

of epidemic or the specific *woredas* affected.[22]An outbreak of another *tesibo* epidemic in Awabal *Woreda* infected more than 1200 people. A health officer, *Ato* Gebre Eyesus Sibihatu, who was in a campaign for malaria protection in the *woreda,* treated 600 patients. However, he returned to the capital Debre Markos town because of the shortage of medicine. The *awuraja* administration requested the general governorate additional medicine and three health officers to cure the remaining patients who were more than 600 in number.[23]

In December 1958 an epidemic in Motta *Awuraja* took the lives of 144 victims; according to a letter from the governor of Motta *Awuraja.* The head of Motta church confirmed the death of these patients within 10 churches.[24]Another epidemic in Baso *Woreda* from Debre Markos *Aworaja* took the lives of 283 victims while the rest 232 were severely infected.[25]

In May 1959 in Aneded *Woreda* at places known as Ashimen and Yegagina Yohanes, a communicable disease (*tesibo*) had killed 25 people and most inhabitants of the areas were sick.[26]A letter to the governorate general written by *Ato* Mihiret Zeleke, *Bilata* Ayalew Emiru and *Ato* Teferi Lewutie on 7/9/51E.C. Reference 1073/44 stated that:

> ከአነደድ ወረዳ ውስጥ አሸመን ኢየሱስና የጋግና ዮሐንሰ ከተባለው አገር ላይ ተስቦ ገብቶ ከአሸማ ኢየሱስ 15 ሰው ሞት የቀረው ሰው በጣሙ ታሞ ተኝቶ ደጅ የሚገ ጡቱት ከብዙን አዉፌ ስለበላው 2ኛ የጋግና ዮሐንሰ 10 ሰው ሞቶ የቀረው ሰው በጣሙ ታሞ ስለተኛ ለክቡረነ ትዎ የምጣለክተው የጣግስት ሞድኃኒት ከነ ሀኪሞች እንዲሰጡን...
>
> In Aneded *Woreda* at places called Ashimene Eyesus and Yegagina Yohannis, an epidemic killed 15 people from Ashimen Eyesus and the rest of society became infected; because no one could close the door, the livestock were left without a custodian. In addition, in Yegagina Yohannis, 10 people died and the rest were infected. Our application for your Excellency is a medicine from physicians.[27]

[22]DMUAC, folder No.ዞን/አስ/0080, File No, 456, For honorable *Ato* Getahun Tesema: Public Healthcare Minister, Ref. No. 4/1017, Date, 12/2/1951 E.C.

[23]DMUAC, folder No.ዞን/አስ/0252, File No, ሙ.በ.119, For Honorable Gojjam Governorate General Office, Ref. No. 919/462/48, Date, 01/3/1951 E.C.

[24]DMUAC, folder No.ዞን/አስ/0080, File No, 456, For Honorable Gojjam Governorate General Office, Ref. No. 1382/218/48, Date, 11/4/1951 E.C.

[25]DMUAC, folder No.ዞን/አስ/0080, File No, 456, For Honorable Gojjam Governorate General Office, Ref. No. 1700/462/48, Date, 10/4/1951 E.C

[26] DMUAC, folder No.ዞን/አስ/0067, file No, ሙ.አ.14, For Honorable Gojjam Governorate General Administrator, 07/9/1951E. C

[27]Ibid.

An outbreak of an epidemic in Debre Marqos town in 1960 forced the government to vaccinate the people going from house to house in the town. The vaccination was recommended by Maziele Paulo, an Italian health worker, at Debre Markos Hospital. Accordingly, it was decided to vaccine the people with or without their will. [28]

In April 1963, an influenza epidemic broke out in Aneded *Woreda*; based on the letter of Debre Markos *Awuraja* police office written 18/8/1955 E.C. The Gojjam governorate general police office notified the governorate general health office about the disease in Aneded *Woreda*. According to a letter by *Dejjazmach* Tsehayu Enquselasie to the governorate general health office, an influenza epidemic occurred in Aneded *Woreda* in April 1963. He ordered the health office to mobilize the necessary *hakim* (physicians) and medicine to the area before it caused great destruction. A letter written from the Gojjam governorate health officials stated that in response to influenza in 1955 E.C (1963) Gebeyehu Ejigu, one of the officers of communicable diseases, went to the *woreda* and gave the necessary treatment.[29]

In September 1969 an epidemic and cholera killed 27 people within three days from 5/1/1962 to 8/1/1962 EC in Machakel *Woreda.* The five sub-*woredas* and the town of the *woreda*, Amanuel were affected by the disease, and the *woreda* governor requested immediate support from Debre Marqos healthcare office.[30]

In 1970, in Bibugn *Woreda,* an epidemic claimed the lives of 20 men. A letter from *Qegnazimzch* Hizkiel Alemayehu, the governor of Bibugn *Woreda,* to Motta *Awuraja* administrative office an epidemic of *tesibo* in five *kebeles* of the *woreda* infected many people and caused the death of 20 people within a week from *Hidar* 23-30, 1963E.C. Informing the

[28]DMUAC, folder No.ዞን/አስ/0080, file No, 456, For Debre Markos Municipality, Ref.No. 1246/9/51, Date, 4/12/1952 E.C.

[29]DMUAC, folder No. ዞን/አስ/0067, File No. ሙ-አ-14, for Gojjam Governorate General Health Office, Ref. No. 1690/12/51፣ Date, 23/8/ 1955 E.C; for Gojjam Governorate General Health Office. Ref. No. 8103/1030፣ Date, 8/9/1955 E.C; for the Ethiopian King of King Government for Gojjam Governorate General Office, Ref. No. 1666/9፣ Date, 15/9/1955 E.C.

[30]DMUAC, folder No. ዞን/አስ/0080, file No.456, For Debre Markos Healthcare office, Ref. No. 29/62, Date 8/1/1962E.C.

spread of the epidemic to other *kebeles* of the *woreda*, the governor requested the *awuraja* administration for immediate medicine and health officers' support.[31]

Small-pox was another health problem in Motta *Awuraja*. It continuously happened in different parts of the *awuraja*. Among these, one was a small-pox epidemic in March 1971 in Motta town. According to archival sources, 16 men were infected with a small-pox that year. After two years, another small-pox epidemic at the end of April 1973 struck Motta town.[32] Another smallpox epidemic in this *Awuraja* was in August 1973 in Bibugn *Woreda*. Although the archival materials don't quantify the number of victims and deaths because of the epidemic, they expressed the amount of damage as significant.[33]

In 1985, a cholera epidemic in Motta *Awuraja* occurred in 11 *kebeles*; seven *kebeles* from Enebsie Sar Midir and four *kebeles* from Goncha Siso Enesie *woreda*. To control the epidemic the government established four temporary healthcare centers in Debo, Denbeza, Mertule Mariam, and Debre Medhanit. In addition to this, creating awareness for 2050 local people, cleaning 34 streams, establishing 2 garbage centers, and preparing 4 toilets were measures taken to control the spread of the disease. This epidemic claimed the lives of 22 people while 892 people were cured of the disease with the collaborative efforts of the provincial and *awuraja* health officers.[34] Another report estimated the number of deaths to be 42.[35]

Malaria was also common in the lowland areas of eastern Gojjam, particularly in areas along the Abay Gorge. Archival materials from Debre Markos University show that malaria eruption was common every year particularly at the beginning and the end of the summer season in these areas. In Bibugn, Enebsie Sar Midir, Shebel Berenta, and other lowland *woredas* there were recordings of consecutive malaria outbreaks for every year. Among these, in October 1958,

[31] DMUAC, folder No.ዞን/አስ/0005, File No.ሙ.ሙ.89.1, From *Qegnazimzch* Hizkiel Alemayehu: the governor of Bibugn *Woreda* to Motta *Awuraja* administrative office, Ref. No. 12/63, Date, Hidar 30/1963 E.C.

[32]DMUAC, folder No.ዞን/አስ/0005, File No.ሙ.ሙ.89.1, For *Fitawurari* Dilinesa Ereta; governor of Motta *Awuraja*, Ref. No. 8065/18/198, Date 7/7/1963 E.C; For Gojjam Governorate General Healthcare Office, Ref. No. 8176/12/81, Date, Ginibot 6/1965 E.C.

[33]DMUAC, folder No.ዞን/አስ/0080, file No.456, For the Governorate General Healthcare office, Ref. No. 29/62, Date 22/12/1965E.C.

[34]DMUAC, folder No.ዞን/አስ/0005, File No.ሙ.ሙ.89.2, For Gojjam Provincial Administrative Office, Ref. No. 6854/319/17, Date 25/11/1977 E.C.

[35]DMUAC, folder No.ዞን/አስ/0005, File No.ሙ.ሙ.89.2, For Enebsie Sar Midir *Woreda* Administrative Office, Ref. No. ሙ/ጤ7/5415, Date 1/12/1977 E.C.

around 58 people in Bichena *Awuraja* Shebel Berenta *Woreda* lost their lives following the malaria epidemic.[36] At the same time, from Debre Markos *Awuraja*, 70 patients died because of the malaria epidemic in Basso *woreda*. Based on the recommendations of the *woreda* administration, the *awuraja* administration stating the death rate of people requested additional medicine and health officers from the governorate general in a letter written on 01/3/1958 E.C.[37]

In the summer of 1984, an outbreak of the malaria epidemic in Bibugn *woreda* caused the loss of lives. According to L/Colonel Melaku Fenta, an officer of the Gojjam province police force, more than five men died per day because of the malaria epidemic in five *kebeles*.[38] Another malaria epidemic in this *woreda* in November 1985 greatly affected the lives of the people. According to a letter of the Motta *Awrajja* administrative office for Gojjam Province Malaria Protection Organization, students withdrew from schools because of the malaria epidemic.[39]

3. Challenges of Treating Diseases

Different setbacks affected the prevention of diseases and epidemics in eastern Gojjam. Problems such as lack of skilled manpower, insufficient and poor health infrastructure, poor logistics and supplies, people's traditions and perceptions, and transportation and communication problems were among the major problems. Manpower problems as well as the absence of sufficient health infrastructure were the first problems of the period. According to a 1954 report submitted for the Ministry of Public Healthcare, there were no more than four effective health officers in the only hospital of Gojjam Governorate General. As a result, manpower problems aggravated the number of deaths and the rate of spread of diseases. The consequences of these diseases increased because of lack of treatments. Most health officers were mobilized into different districts to protect against epidemics at this hospital.[40] In 1957, Debre Markos Hospital had only one general practitioner who served the seven *awurajas* in the governorate general.

[36]DMUAC, folder No.ዞን/አስ/0080, File No, 456, For Honorable Gojjam Governorate General Office, Ref. No. 619/953/49, Date, 12/3/1951 E.C.

[37]DMUAC, folder No.ዞን/አስ/0252, File No, ሙ.ቦ.119, For Honorable Gojjam Governorate General Office, Ref. No. 919/462/48, Date, 01/3/1951 E.C.

[38]DMUAC, folder No.ዞን/አስ/0005, File No.ሙ.ሙ.89.2, For Gojjam Provincial Healthcare Office, Ref, No. 6955/12/81, Date 13/10/1976 E.C.

[39]DMUAC, folder No.ዞን/አስ/0005, file No.ሙ.ሙ.89.2, For Gojjam Provincial Malaria Protection Office, Date 2/3/1978E.C.

[40]DMUAC, folder No.ዞን/አስ/0080, File No, 456, For Honorable Ministry of Public Healthcare, Date, 26/10/1946 E.C.

Therefore, the practitioner was forced to provide mobile service throughout the governorate general.[41]The above-stated report added that the medical stock of the hospital was insufficient and threatened the lives of people in Debre Markos town, the center of the governorate general.[42]Moreover, health officers who went for field work to control the epidemics were challenged by shortage of medicine. As a result, they were forced to return before accomplishing their mission.[43]

In contrast, old tradition, lack of awareness, and lack of interest of people in visiting healthcare centers and using scarce health centers and medicine were very problematic. Therefore, diseases that could be easily cured caused serious damage. In a circular letter to the seven *awuraja* administrations of the governorate general, Debre Markos Hospital stated that because of people's poor participation in health services provided by nearby healthcare centers drugs to treat small-pox and *tesibo* medicines distributed for free use expired without use.[44] The letter added that more than this, the health of the people was in danger due to this tradition. As a result, the hospital requested that local administrations encourage people to develop the tradition of visiting nearby health centers.[45]The local people's lack of interest in receiving vaccination was another bottleneck for the protection of diseases in the Gojjam Governorate General in general and the three *awurajas* in particular. As a result, the drugs bought with foreign currency expired without use. On the other hand, the local administration and health officers became busy convincing people and forced people to take the vaccine.[46]

The transportation problem was the main challenge of mobilizing logistics and manpower during the epidemics. The local people were forced to prepare pack animals for both loading medicine and other materials and transporting health officers. The failure of local administrators and people to prepare the necessary pack animals delayed the supply of medicine and

[41]DMUAC, folder No.ዞን/አስ/0080, File No, 456, For the organization of communicable disease protection, Ref. No. 913/1/48, Date, 25/7/1949 E.C.

[42]DMUAC, folder No.ዞን/አስ/0080, File No, 456, For Honorable Ministry of Public Healthcare, Date, 26/10/1946 E.C.

[43]DMUAC, folder No.ዞን/አስ/0080, File No, 456, For Honorable Ministry of Public Healthcare, Ref. No. 125120, Date, 15/02/1947 E.C.

[44]DMUAC, folder No.ዞን/አስ/0080, file No. 456, For Honorable seven *Awuraja* Administrative Offices, Ref. No. 607/1/48, Date, 9/11/1947E.C.

[45] Ibid.

[46]DMUAC, folder No.ዞን/አስ/0080, File No, 456, For Gojjam Governorate General Office, Ref. No. 2/77/344/44, Date, 5/1/1951 E.C.

manpower.[47]Debre Markos Hospital, which mobilized health officers and medicine during the epidemic, had no single car. This interrupted the movement of the necessary manpower and materials used to prevent epidemics.[48]

Communication barriers were other challenges in preventing or controlling epidemics. Because of the absence of modern communication services, the exchange of information depends on the use of manpower. Therefore, the information may not be communicated properly or may be delayed or may not be sent at all to the appropriate institution or person. For example, a letter was written on 23 April, 1954, to Debre Markos Hospital about the outbreak of an epidemic in five *kebeles* of Sinan *Woreda*, Degemo, and Eribab sub-*woreda*, but the letter was received nearly after six months on 15 September, 1954.[49] Such communication problems increased the rate of the spread of diseases and their damage.

In addition to the above problems, people had developed their own traditional and religious preventive mechanisms. Some of them were applicable in the modern healthcare system. For example, *Qesa* and traditional vaccination were used. The *qesa* system involves isolating the sick and assigning only one or two family members to care for the victim. In this regard, a sick person was isolated and taken away to a nearby forest or cave to reduce the spread of the disease.[50] Therefore, *qesa* is similar to 'social distancing' in modern medical treatment, which is mainly used to prevent the spread of communicable diseases. To prevent the spread of diseases such as small-pox, traditional vaccines were widely used until the mid-1950s. This was not only the case in Gojjam; in Shewa there was the same tradition. As cited by Shimeles (2015), Merseae-Hazen Wold-Qirqos stated the process of traditional vaccination as follows:

> ...ከታቢው ሰው የተከታቢውን ግራ ክንድ በትንሽ ቀሪባ ምላጭ በጥቶ ያደማዋል ውዲያው የሌለውን የፈነጣጣ ቁስል ቀርፎ ጥቂት ሟሟ በነካው የባዘቶ ጥጥ ቁስሉን

[47]DMUAC, folder No.ዞን/አስ/0080, File No, 456, For Gojjam Governorate General Office, Ref. No. 4874/462/48, Date, 5/13/1950 E.C; folder No. ዞን/አስ/0080, File No, 456, For Gojjam Governorate General Office, Ref. No. 2/77/344/44, Date, 5/1/1951 E.C; folder No. ዞን/አስ/0005, File No. መ.መ.89.2, For Motta Healthcare Center, Ref. No. 6628/3/9/75/77, Date 13/11/1977 E.C; For Motta *Awuraja* Administrative Office, Ref. No. 721/መ/መ-89, Date 1/12/1977 E.C.

[48]DMUAC, folder No.ዞን/አስ/0080, File No, 456, For Honorable Ministry of Public Healthcare, Date, 26/10/1946 E.C.

[49]DMUAC, folder No.ዞን/አስ/0080, File No, 456, For Gojjam Governorate General Office, Ref. No. 39.ቀ1, Date, 14/1/1947 E.C.

[50]Shimeles, p. 52

> እያስነ ካ በተበጣው በተከታብዉ ክንድ ላይ እየለጡፈ በጨቅቅ ያስርለታል፡፡ እንግዲህ ከሦስት ቀን በኋላ ተክታብዉ ያተኩሰዋል፤ ፈንጣጣዎም ይዎጣለታል፡፡
>
> The traditional healer slashes the left arm of a newly sick person with a small blade and immediately scratches a wound on the body of a person suffering from smallpox. Then, the healer dabs at the wound with cotton mixed with honey and attaches the scraps from the wound to the slashed arm of the newly sick person and ties it with cloth. After three days, the newly sick person will have fever and will be cured of smallpox.[51]

Religiously, praying for God and washing one's body with *Tsebel* (Holy Water) which is common among Orthodox Christian followers were other coping mechanisms. In addition, consulting traditional healers called *Debtera* and *Tenquay* was common.[52]

4. Pests in Eastern Gojjam

Pests, as stated above, had a long history in Ethiopia in general and in particular Gojjam. In the period under study, the outbreak of pests caused serious damage both to crops and plants. These factors resulted in crop failure and shortage of grazing land. The people in the study area are mainly dependent on mixed agriculture, which combines cultivating crops and domesticating animals. Mostly, the domestication of animals is used to support crop production. Therefore, the animals in the study area can be expressed as agricultural technologies used for cultivating, transporting seeds and harvests, winnowing, and so on. Additionally, they are used as a supportive source of income.[53] As a result, not only crop failure but also damage to grazing land affected the lives of local farmers. Therefore, outbreaks of pests have diverse and interrelated consequences for people. The most frequent pests in Eastern Gojjam were locust and armyworms locally known as *temch*.

In 1977, an endemic pest, armyworms (*temch*), devastated crops in Goncha Siso Enesie and Enebsie Sar Midir *Woredas* in Motta *Awuraja*.[54] In 1984, another armyworms invasion occurred in Enebsie Sar Midir *Woreda*. The worm extended its infestation to the neighboring Goncha Siso Enesie *Woreda*. It became beyond the power of the local authorities and Motta *Awuraja*

[51] *Ibid*.
[52] *Ibid*. p.53.
[53] *Ibid*. p. 40.
[54] DMUAC, Folder No.ዞን/አስ/0071, File No.ሞአ65, From Motta *Awuraja* Administration Office, for Gojjam Provincial Agriculture and Settlement office, Ref. No. 4656-263/, Date June 27/9/1969 E.C

requested further support from the provincial administration.[55]In addition to Motta *Awuraja*, the armyworm attack occurred in Bichena *Awuraja*, Enarje Enawuga *woreda,* and the crop in 15 rural *Qebeles* was devastated. The infestation became out of control, and the *awuraja* and *woreda* administrations requested additional manpower and insecticide.[56]

In May 1978, there was a locust invasion in the lowlands of eastern Gojjam, particularly in Abay Gorge. The lowlands of Motta, Bichena, and Debre Markos *Awurajas* were areas of locust invasion. According to archival documents, locust invasion extended from the neighboring districts of the Shewa and Wollo provincial administrations. The locusts that rose from Dera and Borena in Shewa and Wollo, respectively infested areas in Motta and Bichena *Awurajas.*[57] Enabsie Sar Midir *woreda* in Motta *Awuraja*, Shebel Berenta, and Dejen *woreda* in Bichena and Debre Markos *Awurajas,* respectively, were victims of locust invasion. The problem was severe for the 10 *qebeles* in Enabsie Sar Midir *woreda*. As reported on 3rd Pagumen, 1970 E.C., in the lowland areas of the *woreda* in three *mikitil-woredas* (sub-districts) an organized group composed of farmers, local administration and public militia led by Zerihun Senbeto and Mola Ayelign try to control the spread of the locust on the eve of the Ethiopian New Year.[58]

Initially, people ordered the application of traditional methods to eradicate the locusts by killing the locusts manually, smoking, cracking the whip to frighten the locusts away and grazing cattle. Spraying chemicals both manually and using airplanes was also implemented. To spray chemicals from the air was difficult for pilots because it was not easy to detect the exact location of the locust infestations. Therefore, the local people of the locust-infested areas ordered smoking and waving white and yellow cloth, which were visible from the air, to show the exact location of the locust.[59] The Ministry of Interior also proposed urgent and the same preventive

[55]DMUAC, Folder No.ዞን/አስ/0071, File No.ሞአ65, For Motta *Awuraja* Agricultural Office, Ref. No. ሞ/ተ4/5013, Date June 26/11/1976 E.C

[56]DMUAC, Folder No.ዞን/አስ/0071, File No.ሞአ65, From Bichena *AWuraja* Administration Office for Gojjam Provincial Agricultural Office, Ref. No. 7213-ሞአል, Date July 30/1976 E.C

[57]DMUAC, Folder No.ዞን/አስ/0071,File No.ሞአ65, From Bichena *Awuraja* Administration Office; for Gojjam Provincial Administration office, Ref. No. 2506/467, Date 28/9/1970 E.C; from Ministry of Interior for Ministry of Agriculture and Settlement, Ref. No. አ.ወ10/1/71, May 30/1970 E.C.

[58]DMUAC, Folder No.ዞን/አስ/0071, File No.ሞአ65, for Gojjam Provincial Administration office, Ref. No. 4226/ሞ፡ ሞ, Date 3/13/ 1970 E.C.

[59]DMUAC, Folder No.ዞን/አስ/0071, File No.ሞአ65, From Gojjam Provincial Administration Revolutionary Campaign Coordinating Committee for the seven *Awuraja* administrative offices Ref. No. 10064/10/60, Date 6/10/1970 E.C; For the seven *Awuraja* administrative offices Ref. No. 14074/ሞ/አ65/60, Date 4/13/1970 E.C.

mechanisms for the six provincial administrators affected by locust invasion, namely, Shewa, Gojjam, Tigray, Eritrea, Gonder, and Wollo provinces.[60] In Shebel Berenta *Woreda* alone, 120 quintals of powder chemicals and 42 spraying equipment were distributed to prevent the locust invasion.[61] The Ministry of Agriculture and Settlement supplied 100 quintals of DDT (dichloro-diphenyl-trichloroethane) powder and 10 spray guns in the first week of June 1978 to thwart the spread of the locusts.[62]

In June 1978 the locust invasions expanded to the highlands of Debra Eyesus and Gedemala *Qebeles* from Debay Tilat Gin and Aneded *woredas*, respectively. A month before in May 1978 starting from *Awuja* Giorgis, 15 highland *kebeles* of Hulet Eju Enessie in Motta *Awuraja* were infested by locusts.[63] To prevent the spread of the locusts to the highland and to eradicate them before hatching the people of the highland during this time were mobilized to the lowlands especially to Dejen *Woreda*. However, the locusts had already spread to DebayTilat Gin *woreda* in August 1978.[64]

The above findings show that locust invasions mostly occurred during the crop season from May to October. This season was also a period of malaria epidemic in the lowlands of eastern Gojjam. As a result, the malaria epidemic was a great challenge for both the local people and people from the highlands and governmental offices who were mobilized to eradicate the locust. Alongside materials and manpower mobilization for locust control and prevention, it was necessary to mobilize medicine and health officers to the locust-prone areas.

[60]DMUAC, Folder No.ዞን/አስ/0071, File No.ሞአ65, from Ministry of Interior for Shewa, Gojjam, Tigray, Eritrea, Gonder and Wollo provinces, Ref. No. አ.ጫ10/3/71, date, August 26/1970 E.C.

[61]DMUAC, Folder No.ዞን/አስ/0071, File No.ሞአ65, From Gojjam Provincial Administration Agriculture and settlement office For Bichena *Awuraja* Agriculture and Settlement Office Ref. No. 5085/13/70, Date Pagumen 1/1970E.C.

[62]DMUAC, Folder No.ዞን/አስ/0071, File No.ሞአ65, From Ministry of Agriculture and Settlement to Gojjam Province Agriculture and Settlement Office, Ref. No. 8/ሞከ14/7-3, Date 30/0/1978 E.C.

[63]DMUAC, Folder No.ዞን/አስ/0071, File No.ሞአ65, For Debre Markos *Awuraja* Agriculture and Settlement Office, Ref. No. 4074/170, Date 8/10/1970 E.C; For Debre Markos *Awuraja* Agriculture and Settlement Office, Ref. No. 4074/170, Date 8/10/1970 E.C; From Police Force for the Province Agriculture and Settlement Office, Ref. No. 11197/12/81, Date May 28/1978; From Motta *Awuraja* Administration for Gojjam Provincial Administration Office, Ref. No.3170, Date 27/9/1970 E.C.

[64]DMUAC, Folder No.ዞን/አስ/0071, File No.ሞአ65, For Provincial Agricultural and Settlement Office, Ref. No. 12674/ሞ/አ651, Date 8/12/1970 E.C.

5. Conclusion

In countries such as Ethiopia, which is dependent on traditional agriculture, the existence of natural problems such as diseases and pests strongly influence the productivity of peasants and exposes them to drought and shortage of food. This has been part of the long history of Ethiopia. Eastern Gojjam has no different history from the rest of Ethiopia. Historical documents such as travelers' and missionaries' accounts confirm these findings. For half a century, from 1941 to 1991, there were frequent outbreaks of diseases and pests in eastern Gojjam. Diseases such as *tesibo*, cholera, malaria, and smallpox and pests such as locusts were the common natural problems in the area under study. To some extent, the distribution of diseases varied geographically between the highlands and the lowlands. *Tesibo* infection was more common in the highlands than malaria, which was a disease of the lowlands. Pests also mostly affected the lowland areas. However, locust invasion sometimes occurred in the highlands that rise from the lowlands.

Setbacks such as shortage of skilled manpower, insufficient and poor health infrastructure, poor logistics and supplies, people's traditions and perceptions, and transportation and communication problems challenged the prevention of diseases and pests. To solve these problems and to care for the people, the government developed centralized power and the distribution of materials. Many health officers and drugs were allocated from the center at the time of the epidemic because of the absence of healthcare centers in each *woreda*. The local people also tried to manipulate traditional and religious coping mechanisms.

In conclusion, frequent outbreaks of diseases and pests occurred in eastern Gojjam during the period from 1941 to 1991. During this period, many people lost their lives, and others had to cope with low agricultural productivity and poor health. Diseases claimed the lives of people not only because of the effects of the diseases but also because of poor health infrastructure and healthcare system.

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