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## **CSIR-FOOD RESEARCH INSTITUTE**



### **TRAINING WORKSHOP REPORT ON CAPACITY BUILDING OF WOMEN PROCESSORS IN IMPROVED PARBOILING TECHNOLOGY IN TWENTY COMMUNITIES IN THE TAMALE METRO DISTRICT OF THE NORTHERN REGION OF GHANA**



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### **List of Abbreviations**

AAGDS	Accelerated Agricultural Growth and Development Strategy
CARI	Competitive African Rice Initiative
CSIR - FRI	Council for Scientific and Industrial Research – Food Research Institute
FASDEP I	Food and Agriculture Sector Development Policy I
GPRS I & II	Ghana Poverty Reduction Strategy I & II
MoFA	Ministry of Food and Agriculture
MTADP	Medium-Term Agricultural Development Programme
SATCO	Savannah Agricultural and Trading Company Limited
SAVBAN	Savannah Farmers Marketing Company
PBV	Parboiling Vessel

## **Summary**

Twenty (20) rice processing groups were drawn from the Tamale Metropolitan District of the Northern Region of Ghana for the three (3) half-day Training Workshop on improved rice parboiling technology. The objective of the training was to strengthen the capacities of the target groups to enable them adopt improved rice processing techniques to consistently produce high quality parboiled rice. The participants were trained on rice secondary post-harvest operations covering winnowing, sorting, parboiling, drying, milling and basic business economic models for increased profitability.

All the operations were examined closely with respect to the participants' traditional/current practices and the advantages and disadvantages associated. The participants were taken through the available primary post-harvest technologies (manual or mechanized) that are in use and their effects on quality of rice. The unit operations in the parboiling process were examined in order to perceive the effect they could have on the final quality of the product. Critical unit operations that affect quality such as thorough washing to remove immature grains, hot soaking, steaming and drying were emphasized. Participants were also taken through practical sessions of the post-harvest operations to deepen their knowledge and understanding of the technologies that were introduced to them. Packaging, labelling and marketing of rice were also discussed.

Additionally, the various attributes of quality rice (raw and cooked) were discussed in depth in a bid to make participants quality conscious in their operations as processors. The role each of the actors in the value chain (farmers, processors, millers and marketers) can play to ensure availability of quality rice was also examined.

## **1. Introduction**

Rice is considered the second most important food staple after maize and one of the food security crops in Ghana. Its consumption rate has been increasing as a result of population growth, urbanization and change in consumer habits, taste, and convenience among others. In the past few years, rice consumption in Ghana has seen a tremendous growth from about 542,000 MT (2009) to about 748,000 MT (2014) (NRDS, 2015). . However, the domestic production has been far less than demand hence rice is imported to make up the deficit in domestic rice supply. This amounts to an average of about 290 M US dollars annually. Rice imports into Ghana over the past six years have ranged from 384,000MT in 2009 to 414,000MT in 2014 (NRDS, 2015). The current estimate of per capita consumption is 34.0 kg/person/year. The Ministry of Food and Agriculture policy documents over the years notably, FASDEP I, FASDEP II, GPRS I & II, MTADP, AAGDS and others, have sought to promote rice production to address food security and poverty reduction (NRDS, 2015). Generally, men dominate rice production in all the rice ecologies, but in the processing and marketing sectors, women are the major actors at the small to medium scale levels. The current demand levels for rice gives an indication that promoting the local rice industry will enhance the output and income of the small holder farmers, processors and traders. Rice consumer preference in Ghana has a wide variation with respect to grain quality characteristics. However, long grain, cleanliness, aroma, good taste, swelling capacity and good appearance are the most preferred. Additionally, health-conscious consumers patronize local brown rice while parboiled rice is preferred in the Northern regions of Ghana. Rice parboiling is a major income generating activity in Northern Ghana. The quality of the local parboiled rice compared to the imported ones varies.



The CSIR-Food Research Institute (CSIR-FRI) through some projects helped to address this challenge by the development of improved technology for producing good quality parboiled rice in Northern Ghana. The intervention ensured that critical issues affecting quality were adequately controlled along the post-production chain and has resulted in increased incomes and improved livelihoods through the production of consistently high quality rice. The high quality parboiled rice is mostly produced by women processors who benefited from training and the use of the improved PBV. The PBV prototype developed at CSIR-FRI addresses the problems of drudgery, excessive water and fuel use as well as the length of time required to parboil rice. The transfer of this knowledge as regards quality parboiled rice for increased incomes to other deprived communities in Northern Ghana is imperative if the level of poverty among rice processors in these communities is to be reduced significantly.,

The Competitive African Rice Initiative (CARI) implemented by Technoserve in conjunction with Walmart Foundation seeks to improve women economic empowerment. As part of this CARI-Walmart Foundation initiative, Technoserve contracted the CSIR-FRI, which has extensive expertise in the development and dissemination of post-harvest technologies in Ghana to build the capacities of rice processing groups to consistently produce quality parboiled rice in the Tamale Metro District of the Northern Region. CSIR-FRI also has considerable experience in assessing the changes in the living conditions of rural populations as a result of the uptake of new technologies in Ghana.

## **2. Objective**

The objective of the training is to promote improved rice processing technologies to ensure food security, enhanced marketability and increased processors' incomes. This will be achieved

through the training of a number of rice processing groups with a total membership of about two thousand (2,000) women working with SAVBAN in the Tamale Metro District and five hundred (500) women working with SATCO in the East Gonja, Gushegu, Mion, Saboba, Chereponi and Yendi districts of the Northern Region of Ghana. Additionally, business models will be developed for women processors to assist them to better operate their ventures with basic business principles. The training approach used entailed:

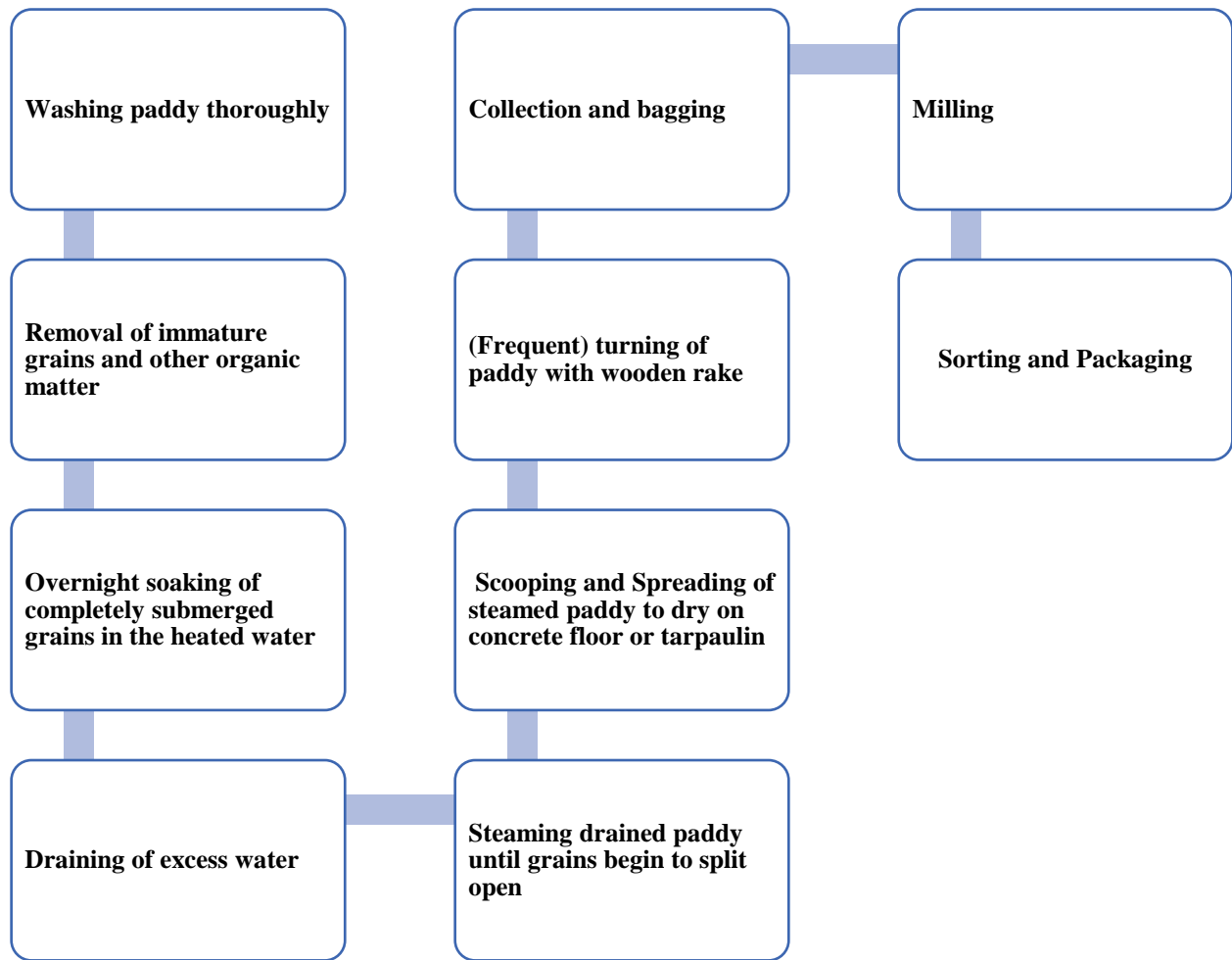
- analysing existing rice post-harvest processing technologies used in the beneficiary communities and identifying gaps
- training of processors in available technologies to address identified gaps
- training of processors in production of quality parboiled rice using improved technology
- training of processors in appropriate packaging and labelling of rice

### **3. Training Approach**

Trainees were introduced to a discussion on quality attributes of good quality rice and the roles actors in the rice value chain must play to ensure quality. All the major linkages amongst the value chain actors were established to enable participants appreciate the complexity involved in the production of quality rice.

Rice parboiling is a hydro-thermal process carried out with the view to improve the nutritional status of the product, reduce breakage on milling, impart different eating characteristics and to change the cooking characteristics was introduced to the trainees.

The process involves the use of one main raw material (rice paddy) and several unit operations to achieve good quality parboiled rice. The steps are detailed below;



**Figure 1: Flow diagram showing the unit operations for parboiling rice**

The approach and methodology employed for the training included plenary discussions, illustrations, practical sessions, experience sharing and case studies. A participatory approach was adopted to enable participants' active involvement in all the activities. A total of twenty (20) on-site training of three half- days per training for the processing groups were conducted.

#### **4. Training**

On the first training day, trainees were introduced to the improved parboiling equipment and all the unit operations involved in the parboiling process. This session was facilitated by the use of picture blocks to train participants in all the good practices (Good Hygienic Practices; Good Manufacturing Practices) in the parboiling process to ensure good quality final product. The unit operations (washing, draining, soaking, rewashing, steaming, sun drying and milling) were aptly demonstrated to the trainees and all the critical areas that affect quality were highlighted. Thereafter, a practical session was held to demonstrate paddy cleaning, washing and soaking operations. The groups were divided into smaller units in all the communities to afford the trainees a hands-on experience.

The second day training involved practical demonstrations of steaming paddy and sun drying of steamed paddy. The trainees were taken through the principles of drying to ensure that they grasped the dynamics and skill of this critical step. Frequent turning of the paddy was recommended to ensure that all sides of the paddy grains are exposed to the sun to ensure an effective sun drying. The third day continued with the use of picture block on good practices on milling of paddy, sorting, packaging and storage. Participants were at the milling house to observe the milling of paddy at a local mill. This was followed by sorting and packaging of milled rice. Packaging and labelling of rice with the view to branding locally produced rice, enhancing competitiveness and adoption of standard weight and measures was discussed with trainees. In addition, participants were taken through a basic parboiling economics and business model. Participants finally reviewed all the parboiling technology transferred and economics course and thereafter evaluated the training.

During the practical work, participants were introduced to the parboiling equipment which was developed by the CSIR-Food Research Institute. Apart from making it possible to parboil 100 kg of paddy at a time, the vessel also has the following additional advantages:

- Less firewood is used (about half the amount of the traditional method).
- The PBV made from Aluminium or stainless steel prevents discoloration in grains
- Drudgery is reduced (there are fewer unit operations and the presence of the drain-pipe on the vessel eliminates draining excess water with baskets).
- The presence of the separating mesh ensures that paddy is not in direct contact with water during the steaming phase.
- Less quantity of water is used in the entire process.

### **Overall outcome**

At the end of the training participants became familiar with the role parboilers as actors in the rice value chain can play in producing good quality parboiled rice by looking at current practices and exploring ways in which they can be improved. At the end of the training programme, trainees had:

- i. Gained more knowledge in primary and secondary processing of rice.
- ii. Gained a deeper understanding of what quality rice is and the role processors and other actors in the rice value chain must play in ensuring the production of quality rice.
- iii. Gained skill in the use of the improved parboiling vessel and appreciated the advantages associated with its use.
- iv. Became aware of the critical unit operations in the parboiling process that adversely affect the quality of parboiled rice.
- v. Considered embracing the idea of packaging (parboiled) rice as a way of standardizing weight and adding value to the product.

### **Challenges for adoption of improved Parboiling practices**

1. Lack of adequate and potable water
2. Processors need buyers to supply them with quality paddy
3. Although the parboiling vessel is convenient, they cannot afford it
4. The women need access to credits and capital to increase their market share
5. Modern milling equipment are needed in their community

### **References**

NRDS, 2015. National Rice Development Strategy, Ministry of Food and Agriculture, Ghana

## **Pictures of pictures showing the unit operations involved in Rice parboiling process**

### **Dungu Community**



Participants from Dungu community





Paddy rice with foreign materials



Winnowing and sorting of paddy



Washing of paddy



Washed paddy



Boiling of paddy in improved vessel



Bubbles on top of water





Soaking of paddy overnight



Steaming of paddy



Drying of parboiled paddy



Milled rice



## Kalarega community 1



A cross-section of participants from Kalarega community



Washing of paddy rice



Boiling of paddy rice





Dewatering stage



steaming of soaked paddy



Drying of steamed paddy



Gathering of dried paddy



Milling of paddy using a roller mill



Premium quality milled parboiled rice





Traditional weighing of milled rice

### Choguu community



Training session at Choguu community





Fetching of paddy rice



Winnowing and sorting of rice



Washing of paddy rice





Boiling of paddy



Steamed paddy



Drying of paddy





Milling of paddy using a roller mill



Milled rice

### **Jakarayili community**



A cross-section of participants from Jakarayili community





Winnowing of paddy



Washing of paddy



Boiling of paddy







Steamed paddy



Drying of paddy



Milled Togo Marshall Rice



## Kalarega community 2



Training session on Good Practices for parboiling rice at Kalarega community.



Winnowing of paddy



Washing of paddy





Boiling of paddy



Soaking of paddy(overnight)



Steamed paddy



Drying of paddy





Milled rice

## **Appendix**

### **Lists of Participants from Twenty (20) Communities**

#### **1. District: Tamale Metro**

##### **Community: Dungu**

##### **Name of Group: Bobgunyeyaa Women's Rice Parboilers' Group**

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1. Hajia Alhassan	36. Adamu Ibrahim
2. Nufisah Sulemana	37. Abiba Naporo
3. Abiba Haruna	38. Samira Mbanba
4. Salamatu Mahama	39. Adejai Alidu
5. Abibata Salifu	40. Sanatu Amadu
6. Amina Moses	41. Memunatu Alhassan
7. Arishetu Abdul-Razak	42. Rukaya Iddi
8. Awabu Abdulai	43. Abibata Mohammed
9. Adisah Yahaya	44. Fuseina Fuseini
10. Ayi Ibrahim	45. Maame Yakubu
11. Alimatu DAWUDA	46. Salima Tahiru
12. Amina Abukari	47. Alima Yahaya
13. Adisah Yussif	48. Abiba Mahama
14. Adamu Haruna	49. Adamu Alhassan
15. Naama Abdulai	50. Sikenka Zakaria
16. Sanatu Yussif	51. Ayishetu Tia
17. Adisah Yahaya	52. Sanatu Abu
18. Awubu Iddi	53. Adamau Yakubu
19. Sanatu Kofi	54. Meli Abukari
20. Alimatu Abdulai	55. Asia Alhassan

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- |                       |                      |
|-----------------------|----------------------|
| 21. Amina Yakubu      | 56. Adamu Nurideen   |
| 22. Barikisu Adam     | 57. Memunatu Abukari |
| 23. Sanatu Tahiru     | 58. Sanatui Abukari  |
| 24. Zaharawu Mumuni   | 59. Rahama Yakubu    |
| 25. Samiyatu Alhassan | 60. Damata Alhassan  |
| 26. Samiyatu Seidu    | 61. Fauzia Alhassan  |
| 27. Fati Imoro        | 62. Ayisha Yahaya    |
| 28. Abiba Mumuni      | 63. Salima Jatoe     |
| 29. Gurupaga Salifu   | 64. Adamu Abdulai    |
| 30. Barikisu Issahaku | 65. Lamatu Mahmadu   |
| 31. Sanatu Abukari    |                      |
| 32. Fauzia Suale      |                      |
| 33. Sala Awal         |                      |
| 34. Ayisha Zakaria    |                      |
| 35. Mariama Alhassan  |                      |
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**2. District: Tamale Metro****Community: Kalarega****Name of Group: Wunizooya Women's Rice Parboilers' Group**

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1.	Martha Mahama	19.	Sana Abdulai
2.	Memunatu Amadu	20.	Sakina Salifu
3.	Fatima Mumuni	21.	Sherifa Fuseini
4.	Adamu Fuseini	22.	Fusheria Sumailia
5.	Tani Karim	23.	Lansa Abukari
6.	Rukaya Mohammed	24.	Afi Suale
7.	Amishetu Amadu	25.	Ayi Abdulai
8.	Ruakya Iddi	26.	Zeliya Rufai
9.	Fatima Basiru	27.	Sanbila Abdulai
10.	Ashetu Yakubu	28.	Ramatu Musah
11.	Assibi Alhassan	29.	Sharatu Musah
12.	Memunatu Fuseini	30.	Salima Alhassan
13.	Arishe Abdulai	31.	Rahama Abukari
14.	Sharatu Kardie	32.	Fatimata Fuseini
15.	Sabratu Adam	33.	Ayi Majeed
16.	Memunatu Alhassan	34.	Zuweirw Yakubu
17.	Ayi Ibrahim	35.	Moshi Haruna
18.	Zabaga Iddrisu		

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**3. District: Tamale Metro****Community: Choggu****Name of Group: Dimalo Chei-Wuni Women Rice Processors Group**

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1.	Alhassan Takoro	18.	Hamza Ayisha
2.	Alhassan Samata	19.	Alhassa Abibata
3.	Salifu Fati	20.	Alhassan Fauzia
4.	Salifi Adamu	21.	Mohammed Arahamatu
5.	Ziblim Fuseina	22.	Musah Yaawa
6.	Yabdoo Sanatu	23.	Sulemana Adamu
7.	Yabdoo Ayishetu	24.	Alhassan Zeinabu
8.	Isaah Rukaya	25.	Fuseini Beiyom
9.	Fuseini Sanatu	26.	Abukari Rahama
10.	Sulemana Kaasuwa	27.	Salifu Zeilia
11.	Iddrisu Baamunu	28.	Salifu Salamatu
12.	Alhassan Hamdia	29.	Yusif Fuseina
13.	Iddrisu Fatima	30.	Yusif Sanbila
14.	Issahaku Amina	31.	Amadu Sanatu
15.	Yakubu Sala	32.	Azara Alhassan
16.	Salifu Ayisha	33.	Azara Sulemani
17.	Hamza Sahada		

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**4. District: Tamale Metro**

**Community: Jakarayili**

**Name of Group: Suro N Bori Ba Ni Women's Group**

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1. Sharatu Safina	9. Zakaria Rabiatsu
2. Abubakari Maria	10. Mutalu Maria
3. Samatu Yakubu	11. Iddrisu Fati
4. Alimatu Iddrisu	12. Damaba Amina
5. Baba Amina	13. Abubakari Memunatu
6. Abdul Fatawu Maria	14. Iddrisu Salmatu
7. Iddrisu Abibata	15. Shani Maria
8. Sayibu Maria	16. Abdul Rashid Zeleya

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**5. District: Tamale Metro****Community: Kalarega****Name of Group: Suglo Mbori Buni Women's Rice Parboilers' Group**

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1.	Ayishetu Alhassan	21.	Salima Abdul Rahaman
2.	Meeli Adam	22.	Mariama Deeci
3.	Ayishetu Baba	23.	Shaharu Sanatu
4.	Gado Issahaku	24.	Alhassan Arisha
5.	Fihata Alhassan	25.	Ibrahim Ayisha
6.	Sana Adam	26.	Adamu Mohammed
7.	Barikisu Alhassan	27.	Adisah Fuseini
8.	Zeinab Muniru	28.	Ibrahim Abiba
9.	Sakina Baba	29.	Adam Rahama
10.	Ayi Adam	30.	Dawuda Rabi
11.	Rukaya Yakubu	31.	ADAM Hubeida
12.	Sanatu Ibrahim	32.	Adisah Salifu
13.	Damata Ibrahim	33.	Siche Abukari
14.	Suweiba Yakubu	34.	Ayi Mohammed
15.	Sherifa Munkaila	35.	Sana Adam
16.	Mohammed Ayisha	36.	Shaharu Memunatu
17.	Zakaria Sumaya	37.	Samata Mohammed
18.	Ramatu Alhassan	38.	Mama Abdullai
19.	Abiba Alhassan	39.	Sana Muniru
20.	Alhassan Wahub	40.	Sanatu Yakubu.

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**6. District: Tamale Metro**  
**Community: Kakpagyili**  
**Name of Group: Maltiti**

- 
1. Ayeshetu Musah
  2. Maimunatu Yahya
  3. Amina Amau
  4. Ayeshetu Zachariya
  5. Salamatu Zachariya
  6. Sanatu Musah
  7. Fatimata Adam
  8. Ayi Abu
  9. Amina Zachariya
  10. Adamu Abdulai
  11. Salamatu Issah
  12. Mariama Adam
  13. Sabratu Iddrissu
  14. Katumi Inusah
  15. Maimunatu Fuseini
  16. Sanatu Issah
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**7. District: Tamale Metro**  
**Community: Kpanvo**  
**Name of Group: Tiyumba**

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1. Seidu Salamatu
  2. Mumuni Mariama
  3. Arbu Fatima
  4. Zakaria Yaawa
  5. Sulemana Salamatu
  6. Salifu Fuseini
  7. Ibrahimzilata
  8. Yahya Adamu
  9. Mahama Mariama
  10. Iddrisu Fuseini
  11. Salifu Zuweira
  12. Abdul-Rahaman Ayi
  13. Abdul-Rahaman Zaratu
  14. Salifu Ramatu
  15. Ramatu Baba
  16. Mariama Fuseini
  17. Karimu Ayesha
  18. Zainabu Alhassan
  19. Napari Yahya
  20. Sabratu Napoloo
  21. Zainabu Musah
  22. Zabala Abdulai
  23. Mariama Alhassan
  24. Alima Alhassan
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**8. District: Tamale Metro**  
**Community: Chanzeini**  
**Name of Group: Grukativale**

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1. Mariama Fuseini	21. Salmu Dauda
2. Maimunatu Alhassan	22. Adamu Mohammed
3. Ramatu Alhassan	23. Hassana Sulemana
4. Damata Abukari	24. Fatima Abdulai
5. Sanatu Yussifu	25. Ramatu Abdul-Karim
6. Barikisu Yussifu	26. Mariama Iddrisu
7. Mariama Iddrisu	27. Huzaima Habib
8. Zariya Iddrisu	28. Issah Azara
9. Abiba Abu	29. Rukaiya Aminu
10. Adamu Dauda	30. Aisha Imoro
11. Zalya Abdala	31. Hanatu Sulemana
12. Azara Mohammed	32. Samata Abukari
13. Azara Musah	33. Rafiya Mohammed
14. Maimunatu Abukari	34. Salma Issah
15. Kaua Inusah	35. Andah Issah
16. Mariama Zakariya	36. Fatima Abdul-Sallam
17. Rabi Zakariya	37. Naashikai Issah
18. Zuweira Issah	38. Fati Issah
19. Arishetu Mohammed	39. Zainab Iddrisu
20. Fuseini Rafatu	40. Arishetu Issah

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**9. District: Tamale Metro**  
**Community: Pagazaa**  
**Name of Group: Suglo Mboribuni Group**

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1. Amaama Shaibu	31. Ayesha Saani
2. Sanatu Mumuni	32. Salamatu Sulemani
3. Ayishetu Razak	33. Rahi Alhssan
4. Salamatu Yakubu	34. Salima Maazu
5. Fatima Alhassan	35. Rabi Salifu
6. Salamatu Sumaila	36. Samata Sumaila
7. Adamu Abukari	37. Zuweida Sumaila
8. Sanatu Adam	38. Ayishetu Mumuni
9. Abibata Osman	39. Kausada Abdulsammed
10. Fatimatu Sandow	40. Sumaiya Mohammed
11. Zanaib Adam	41. Amina Mumuni
12. Katumi Yakubu	42. Samata Hamza
13. Maami Abukari	43. Amina Salifu
14. Hasana Latif	44. Munira Sulemana
15. Saadia Abdulatif	45. Kulsum Yussif
16. Ayisha Adam	46. Rukaiya Mustapha
17. Fatimata Abdulkarim	47. Asana Alhassan
18. Sanatu Ibrahim	48. Ayisha Zakaria
19. Fulera Adam	49. Sala Zakaria
20. Hasana Yahya	50. Fatima Alhassan
21. Atika Sulemana	51. Mariama Hamza

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|-------------------------|---------------------------|
| 22. Adisa Abdulai       | 52. Amina Yahya           |
| 23. Barikisu Abdulai    | 53. Bintu Mumuni          |
| 24. Rahinatu Abdulsamed | 54. Hamdeeya Mohammed     |
| 25. Adamu Alhassan      | 55. Abiba Adam            |
| 26. Zalya Mohamed       | 56. Maimunatu Ibrahim     |
| 27. Ayshetu Sulemana    | 57. Faiza Mustapha        |
| 28. Rashida Musah       | 58. Shukuratu Abdulkaharu |
| 29. Ruhiya Iddrisu      | 59. Mustapha Humaima.     |
| 30. Hamatu Ibrahim      |                           |
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**10. District: Tamale Metro**  
**Community: Kpawumo**  
**Name of Group: N-Nyayam**

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1. Umur Alhassan	23. Fatimata Sahadu
2. Sammed Fuseini	24. Salamatu Moro
3. Adamu Abdulai	25. Ayisha Umur
4. Azara Alhassan	26. Hawawu Shahadu
5. Abiba Ibrahim	27. Sakina Abdulsammed
6. Abiba Fuseini	28. Aliya Summed
7. Fatimata Abdurahaman	29. Zara Adam
8. Fatima Mohammed	30. Azara Iddrisu
9. Munira Mohammed	31. Azara Tahiru
10. Areshetu Inusah	32. Rafiya Issahaka
11. Samata Mumuni	33. Anifa Abdulai
12. Fadima Abdulmumin	34. Sanatu Adam
13. Ruhiya Ibrahim	35. Zalya Aminu
14. Fuseina Naseru	36. Rahinatu Tahiru
15. Nimatu Abdulrazak	37. Arbu Dauda
16. Maimunatu Yussif	38. Suweiba Alhassan
17. Adisa Alhassan	39. Murjarna Abdulfatahu
18. Wasilatu Fuseini	40. Fati Seidu
19. Maimunatu Mohammed	41. Abiba Aminu
20. Suweiba Osman	42. Mayri Musah
21. Maria Mohammed	43. Areshetu Mohammed
22. Amina Abdurahaman	44.

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**11. District: Tamale Metro**  
**Community: Tuutingli**  
**Name of Group: Bangsi Yargsa**

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1. Barikisu Salifu
  2. Adamu Amidu
  3. Memunatu Mohammed
  4. Nafisa Sumanu
  5. Sherifa Zakari
  6. Lateefa Salifu
  7. Wasila Yakubu
  8. Bintu Abukari
  9. Habib Mariam
  10. Amina Sumani
  11. Medire Abubakar
  12. Yakubu Hawabu
  13. Zenaibu Alhassan
  14. Barikisu Baawa
  15. Damatu Ibrahim
  16. Barikisu Yahaya
  17. Memunatu Wahabu
  18. Salamatu Ibrahim
  19. Salamatu Issahaku
  20. Sanatu Ibrahim
  21. Sadiya Alhassan
  22. Abukari Hamdara
  23. Zakaria Memuna
-

**12. District: Tamale Metro**  
**Community: Kukuo Yikpala**  
**Name of Group: Tehisuma Ladies Group**

- 
1. Abukari Amawa
  2. Abdul-Rahman Sawdatu
  3. Yakubu Ayishetu
  4. Mumuni Mariama
  5. Adam Alima
  6. Zubeiru Sawdatu
  7. Abukari Humu
  8. Saeed Rukaya
  9. Aminu Sumaya
  10. Fuseini Zina
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**13. District: Tamale Metro**  
**Community: Zagyuri**  
**Name of Group: Gubkatmali**

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1. Memunatu Abukari	18. Fati Zakaria
2. Sanatu Iddrisu	19. Damu Lansa
3. Samata Abdulai	20. Adija Zakaria
4. Sanatu Tahapa	21. Lahi Dahamani
5. Memunatu Iddrisu	22. Nafisa Adam
6. Mta Dahamani	23. Labi Neindow
7. Hadija Tahiru	24. Samata Alhassan
8. Sanatu Abdulai	25. Adahanatu Alhassan
9. Fusena Haruna	26. Nafisa Abdulai
10. Salamatu Yakubu	27. Ashetu Alhassan
11. Wasila Yakubu	28. Sanatu Abdul-Rahman
12. Alhassan Azara	29. Fuseina Mohammed
13. Fati Salifu	30. Nafisa Adam
14. Adamu Dawuni	31. Belawu Baba
15. Amina Salifu	32. Oshama Iddrisu
16. Gurimpaga Mohammed	33. Sanatu Baba
17. Mohamme Sugtu	34. Sala Alhassan

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**14. District: Tamale Metro**  
**Community: Sangyuri**  
**Name of Group:**

- 
1. Merie Mohammed
  2. Awabu Alidu
  3. Rahinatu Abdulia
  4. Arahamatu Abdul-Azeez
  5. Abiba Zakaria
  6. Maria Dokurugu
  7. Maraiama Fuseini
  8. Mariama Imoro(I)
  9. Azaratu Mohammed
  10. SanaYakubu
  11. Mariama Imorro (II)
  12. Sikeina Sumaila
  13. Sanatu Abdulai
  14. Sana Abdulia
  15. Mariam Yakubu
  16. Kamaria Yakubu
  17. Mariam Fuseini
  18. Wurhana Alhassan
  19. Rahmatu Adam
  20. Amina Wuni
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**15. District: Tamale Metro**

**Community: Nyohini**

**Name of Group: Nyebu Biyoona Processers Association**

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1. Aisha Otibo
  2. Ahulatu Abulcari
  3. Ayi Alhassan
  4. Zanatu Fuseheini
  5. Meevi Imoro
  6. Nafisa Ilhasu
  7. Dzaaratu Illiasu
  8. Safia Hamna
  9. Adamu Ada
  10. Afirua Mohammed
  11. Aisha Alhassan
  12. Memunatu Ibrahim
  13. Fuseina Ibrahim
  14. Memunatu Adam
  15. Biibi Alhassan
  16. Ashetu Saibu
  17. Azara Razak
  18. Memunatu Alhassan
  19. Adamu Alhassan
  20. Ayi Alhassan
  21. Senatu Alhassan
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**17. District: Tamale Metro**  
**Community: Gbrimah**  
**Name of Group: Wumpini Women Processors**

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1.	Abiba Fuseini	17. Ayishetu Mohammed
2.	Arishetu Fuseini	18. Gurinpaga Ibrahim
3.	Mata Yakubu	19. Sheratu Mohammed
4.	Sabratu Mohammed	20. Adisa Munkaila
5.	Mariyam Abukari	21. Sanatu Mohammed
6.	Mariyama Mohammed	22. Awabu Fuseini
7.	Samatu Zakaria	23. Jawadia Abdul- Razack
8.	Azaratu Yussif	24. Sanatu Abukari
9.	Salima Amadu	25. Mariyam Yakubu
10.	Katumi Masahudu	26. Arishetu Inusah
11.	Amina Danko	27. Chekopaga Baba
12.	Balima Issah	28. Rukia Baba
13.	Rukaya Aukari	
14.	Memunatu Issah	
15.	Rukaya Mohammed	
16.	Mariama Issah	

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**18. District: Tamale Metro****Community: Gumo****Name of Group: Gumo Rice Sellers Association**

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1.	Diana Tiesim	17.	Busari Mahama
2.	Vivian Dinko	18.	Saanbila Abdulai
3.	Mary Anaba Musah	19.	Mariam Karim
4.	Alhassan Mariam	20.	Barkisu Issah
5.	Abbu Alhassan	21.	Salamatu Haruna
6.	Alhassan Sala	22.	Sumaya Abdul-Rahaman
7.	Samata Dokudugu	23.	Mahama Laabi
8.	Abiba Amadu	24.	Ayi Dasmani
9.	Fatimata Shirazu	25.	Cecilia Aminu
10.	Rukaya Issah	26.	Gariba Cynthia
11.	Ibrahim Fati	27.	Musah Tia
12.	Zelia Issahaku		
13.	Abdulai Zuwera		
14.	Sanatu Gazali		
15.	Alhassan Sanatu		
16.	Patrick Mary		

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**19. District: Tamale Metro**  
**Community: Sugashie**  
**Name of Group: Sorulo Mbori Buni**

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1.	Damata Karimu	21.	Sanaatu Mohammed
2.	Memunatu Alhassan	22.	Fati Salifu
3.	Ayi Alhassan	23.	Samata Zakaria
4.	Faiza Muniru	24.	Fusiena Alhassan
5.	Fati Alhassan	25.	Ayi Siibi
6.	Sanatu Ibrahim	26.	Rahi Alhassan
7.	Ayi Ibrahim	27.	Zehara Isshaku
8.	Azaara Abdullah	28.	Memunatu Mohammed
9.	Damu Latifu	29.	Issahaku RashiaAlimatu Yussif
10.	Rahi Yakubu	30.	Afi Abubakari
11.	Memunatu Osman	31.	Fati Alhassan
12.	Azaaratu Poul	32.	Abiba Abukari
13.	Samata Alhassan	33.	Sikenatu Ziblilah
14.	Amulatu Simon	34.	Amina Alhassan
15.	Sanatu Zakaria	35.	Memunatu Alhassan
16.	Damaata Alhassan	36.	Sanatu Alhassan
17.	Samata Issahaku	37.	Sala Takoro
18.	Andaratu Yakubu	38.	Aminatu Braima
19.	Amina Mohammadu	39.	Nuriatu Mumuni
20.	Baraka Mohammed	40.	

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**20. District: Tamale Metro**  
**Community: Wayamba**  
**Name of Group:**

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1.	Alhassan Fatimata	14.	Iddrisu Amina
2.	Alhassan Awabu	15.	Iddrisu Sharatu
3.	Alhassan Maria	16.	Fuseini Rukaya
4.	Iddrisu Fati	17.	Yakubu Sadia
5.	Abukari Mariama	18.	Dokurugu Sanatu
6.	Adam Zenabu	19.	Majid Zeharaw
7.	Abdulai Abiba	20.	Abdul-Rahamani Arishe
8.	Issah Zehara	21.	Abdul-Rahamani Sanatu
9.	Seidu Maria	22.	Issa Sanatu
10.	Abukari Bamunu	23.	Issa Lasithe
11.	Adam Adisa	24.	Abdul-Rahamani Rahma
12.	Imoro Safiatu	25.	Iddrisu Sana
13.	Baba Salamatu		

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