

THE 1987 NUTRITIONAL GARDENING WORKSHOP IN MAURITANIA  
FINAL REPORT

Prepared by

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## PROGRAM OVERVIEW

This IST in Better Nutrition through Mixed Gardening was conducted in Nouakchott, Mauritania from April 16th through the 26th of 1987 with a total of 8.5 days of training activities. The program was organized by the Office of Training and Program Support, Peace Corps Washington by Peggy Mietes (Health) and Richard Record (Agriculture). The program was requested and supported in Mauritania by Becky Raymond, APCD/Health. Her request was based on the success of this training as it was given the year before by Drew Lent and Mary Pecaut, and the success she felt participants had had in adapting concepts from the workshop in their on-site work.

A major goal in conducting this IST for a second time was to develop an in-country capacity to incorporate the concepts and skills of this workshop into the yearly PST for Health Volunteers. To this end PCVs David Phillips and Michele Plorde were responsible for the design and delivery of many of the sessions. David Phillips is a third year Volunteer in agriculture. He had trained some agricultural sessions in the workshop with Drew Lent and Mary Pecaut. Michele Plorde is a second year health Volunteer who had attended the IST the year before.

Host Country Nationals (HCNs) were not represented in the training staff. Although a HCN from the agricultural school in Kaedi was identified as a trainer, he did not assist in the training program as planned due to failures in communication on several levels. Thanks to Moustapha Sidat (APCD/Agriculture), Mr. Youssouf Thaim from the Ministry of Agriculture was able to participate as a guest speaker. He spoke on Pest Control and Fruit Trees. His talks were informative and easy to understand, his style open and direct, and he translated the points which he felt were exceptionally important into Pulaar.

Ken Lejoie, a PCV participant in the workshop and a health volunteer, also helped in the training of the workshop. He and Michele Plorde planned and delivered the session on Nutrition. This team approach provided a supportive and creative base for both individuals which resulted in a dynamic session.

Seven PCVs and six HCNs participated in the IST. The PCVs were all Health Volunteers who had been in service for 6 months. Five of the six HCNs were local counterparts of the attending volunteers. The sixth, Madame Blal, was from the Ministry of Health and Social Affairs. She was an excellent participant, bringing additional experience to the group as well as helping to keep the group motivated. The two HCN professors who provided language translation were also active participants. In general, participation was good and well balanced between PCVs and HCNs.

The workshop was delivered entirely in French with translation into Pulaar and Hassaniya. All of the HCNs but one had some level of language skills in French. This greatly facilitated their ability to make use of information presented in the workshop. Two participants

needed some translation into Pulaar when points were not clear to them. One required translation into Hassaniya. It was this third person who had no French background. In addition, social distance between herself (a Black Moor) and the translator (a male and a White Moor) did not facilitate an open exchange. Some PCVs had difficulty in following the French and required later explanations in English. These PCVs do not commonly use French in their work.

## LOGISTICS

Nouakchott was chosen as the training site in lieu of conducting the training in Kaedi as it had been the year before. This was based on the seasonal timing of the workshop and the fact that it was hotter and dryer in Kaedi at this time of the year. This was well illustrated during the workshop. On our hottest day it was 118 F in Nouakchott while in Kaedi it was reported to be 136 F.

Classroom exercises, lunch, and siesta were taken by the whole group in the Peace Corps Maison de Passage. Gardening activities were conducted in a large private garden 8 kilometers from this house. The Garden chosen was excellent in its resources of space, materials, and established plots and trees. The gardener working there was not only skilled in applying variations of many of the principles that we were interested in teaching, but also interested in participating in our activities to improve his skills. We also visited the Hospital Gardens in Nouakchott and examined gardening techniques, social and economic considerations affecting those gardens, insect and pest problems, and fruit tree production. This provided us with a good contrast between private and commercial gardening in the capital.

Although this arrangement of multiple working sites created a requirement for transportation, each separate working site was an excellent choice. However, in light of logistical problems outlined below and illustrated in the daily schedule of events, the loss of time in transportation and the shifts in last minute training sites for agricultural sessions, the distance between these sites had a definite and detrimental effect on the workshop.

Logistics and funds were handled by Tawel Oumrou ould Ahmed who conducted his responsibilities capably, efficiently, and in good cheer. He was also very helpful in clarifying cross-cultural issues that affected the workshop and in the daily planning of activities. His willingness and ability to conduct these affairs were well appreciated in light of the logistical constraints of the workshop.

## Difficulties

1. Peace Corps Mauritania had a variety of activities being conducted at the same time as this workshop. These activities included a

motorcycle stage, a workshop for PCV TEFL teachers, and a training for HCN language teachers who would be working on the up-coming PST, as well as this workshop. These coinciding activities greatly reduced the availability of resources for this workshop.

2. Transportation was inadequate to allow the conveyance of participants and staff between work sites throughout the workshop. Two vehicles were required to do this and they were not commonly available.
3. While the Maison de Passage was an excellent setting for informal teaching, learning, siestas and lunch it had a negative impact on the regular functions of the house. PCV participants noted that the workshop interfered with the normal functions of the house for Volunteers by virtually monopolizing it during the day. Lack of water was also a problem. The cistern was often empty which created a problem with the modern toilets, both for the people staying in the house and for the workshop participants. This also caused a shortage in the availability of drinking water.
4. The workshop was scheduled for a ten day period between April 16th and the 26th. However, several factors reduced the amount of time during this period available for the workshop. Two of these factors should have been taken into consideration in the initial scheduling of the workshop. First, Friday is a holy day for Mauritians and they need the entire day off. Secondly, Easter fell within the workshop period and Peace Corps Volunteers needed time off to attend church.

The third factor affecting the amount of time available for the workshop was an international convention of the Presidents of West African States. The day that the Presidents arrived was declared a holiday and we were unable to meet. The following days were marked by traffic stoppages which affected our ability to get to the different work sites.

While Peace Corps Mauritania was unaware of the timing of this convention at the time that the dates for this workshop were set this type of unforeseen problem is always a possibility where transportation between work sites is an issue.

## WORKSHOP CONTENT

### The Workshop Goal

The goal of this training was introduced and defined during the first session of the workshop as follows:

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To become able to improve the level of food security at the household level by employing gardening techniques appropriate for Mauritania and a knowledge of basic nutrition in order to enable a family to be more self-sufficient in food resources all year round.

### Nutrition

A variety of points led us to focus on very basic nutritional issues. First, as indicated in the Lent/Pecaut report of 1986, vegetable growing or consumption is not widely practiced in Mauritania. Where production is practiced the gardens focus on commercial aspects and have little nutritional focus. For example, it is unclear as to whether the producers themselves consume little more than what is left over after marketing and crop selection is based solely on market value.

In total, the inventory of fruits and vegetables available in Mauritania is very limited. (See summary charts for Calendar Exercise). Mauritians, in general, do not have a long experience in agriculture and are learning new cultivation practices. Environmental constraints also severely limit the opportunities for production. No dark green leafy vegetables are consumed. Beets are the only garden vegetable commonly grown with a dark green leaf and these are fed to sheep.

Secondly, the availability of fruit and vegetables throughout the year was clearly indicated as a problem during the Food Calendar Exercise (see summary calendars). There are long periods of time when no fresh or dried fruits and vegetables are available. Consumption becomes irrelevant where the produce simply does not exist.

Thirdly, it became clear during the Calendar Exercise that HCNS felt that if people were eating at all they were eating well. This meant that if people were relying on a little meat and cereal for several months out of the year they were still considered to be well nourished.

Finally, in terms of child nutrition, when there are adequate food resources available children are fed a lot. The cultural preference is for pudgy, fat babies, and if possible people will feed their babies to this state. The problem that mediates this preference is the lack of food. This is not to say that problems in child nutrition do not exist but that the availability and diversity of foods which are basic to child nutrition are more fundamental problems in Mauritania.

Given these factors the nutritional objectives of this workshop were;

1. To educate people about the importance of fruit and vegetables in a balanced diet and to demonstrate their palatability.

2. To develop food storage techniques for fruit and vegetables to alleviate seasonal shortages.
3. To develop gardening skills that would increase production during growing seasons.

### Gardening

The gardening materials were developed around a list of essential gardening techniques provided by Richard Record (OTAPS/Agriculture) and adapted to the Mauritanian environment.

### COURSE OUTLINE AND CONTENT

#### Nutrition

Nutrition (2 hours, Florde and Lajoie): A session on very basic nutrition using three food groups (vitamins and minerals, protein, and carbohydrates and fats) was presented. Vitamin deficiencies of A and C were recognized and discussed. By the end of the session participants were familiar with the three food groups and their benefits. Balanced meals were illustrated and discussed using drawings of local foods on a flannel board. The importance of fruit and vegetables was clearly illustrated and understood. The seasonal lack of these foods was discussed.

Food Drying (2.5 hours, Florde): Food drying was introduced as a method for making fruit and vegetables available all year round. Foods which are traditionally dried were listed. Other local foods which can easily be dried were added to the list. Dried bananas and mangos as well as cabbage, carrots, and tomatoes were passed around and the fruits were tasted. The participants then processed and dried quantities of vegetables and fruit to become familiar with the processes and to prepare supplies for further food demonstrations during the workshop. This included produce selection, treatment, drying and storage.

Preparing a Good Meal (including the Market Trip and Food Preparation - 4.5 hours, Florde). In this session appetizing meals were to be prepared (by three different groups of participants) which illustrated the principles of the three food groups, using dried foods, and which was presented in a culturally acceptable meal. All three groups made a variety of rice, fish, and vegetables; the traditional lunch meal in Nouakchott. Rice, oil, and dried vegetables were provided as part of each group's "family stores". All other food resources for the meal were to be bought in the marketplace that morning with a "household budget" of 200ug ( a little less than \$3.00) for a meal for five people.

Meals were reviewed for cost, taste, and nutritional content. All were rated as excellent and no difference in quality or taste was observed between dried and fresh vegetables. The meal which used the largest amount of dried vegetables was also the least expensive.

### Gardening\*

Garden Bed Preparation (4 hours, Phillips): The field session began with a discussion of how to plant a nursery seed bed and how to plant direct-seeded vegetables. Information was presented through a method demonstration. This demonstration included: planting techniques, the value of adding manure to the bed, how deep to cultivate, the need for good seeds, how to plant, how much water is needed, and shading. After this presentation the participants prepared their own garden plots. A Volunteer and a counterpart worked together to cultivate each bed.

Visit to the Hospital Gardens (2 hours, Phillips): The purpose of this field trip was to show the participants examples of mixed gardens. The participants also had the chance to ask the gardeners specific questions about their work, such as the problems they encountered in gardening in Mauritania, where they procured their inputs, what they did with produce, etc. The Mauritanian counterparts seemed to derive much more benefit from the session than did the Volunteers in that for many of the Mauritians this was the first time they had seen gardens as developed as those at the Hospital.

Characteristics of a Mixed Garden (2 hours, Phillips): In this session we examined the characteristics of a mixed garden. We looked at the multilevel nature of mixed gardens, how to intercrop different types of cultures (trees, bushes, fruit trees, forage, vegetables), the difference between market and family gardens and can a garden be both, what inputs are needed, and so on. We found that we attempted to provide too much information during this session. It would have been better to address this subject during more than one session, perhaps by presenting a general overview the first day of the training, and then explain how each session relates to this subject.

Transplanting (1.5 hours, Phillips): This session covered the principles and practicalities of transplanting vegetables in Mauritania. The trainer demonstrated how to transplant while discussing the following issues:

1. Land preparation.
2. Proper depth of the hole for transplanting.
3. How to choose plants with the best chance for survival during transplanting, importance of thinning to develop strong plants.
4. Watering; use of manure tea.
5. Shading.

Soil Lab (45 minutes, Phillips): The purpose of this session was to demonstrate the differences in water retention capacities between sandy and clay soils, and humus. Also we discussed the nutrients in the soil and how these can be leached away by irrigation, the dangers of root rot in sandy soils, and how the structure of the soil can be improved by the addition of organic matter. The session began with a brief discussion of the different types of soils, then each type of soil was examined in terms of its water and nutrient retention capacity. To illustrate soil porosity a demonstration was presented, pouring water over different soil types in strainers. This showed how water passed through different soil types. The session, while appropriate for the counterparts seemed to be unchallenging and too simple for the Volunteers. Another problem that we encountered was that it is next to impossible to find anything other than sandy soil in Nouakchott. While we were able to improvise a humus type soil, we were not able to find any clay soil.

Soil Improvement Techniques (1.5 hours, Phillips and Bell): During this session we discussed the importance of adding organic matter to the soil to improve water holding capacity; nutrient retention (and the addition of other nutrients from the organic matter); the structure of the soil thus allowing for better root and tuber development. The trainers demonstrated how to make manure tea and compost discussing how and when this should be added to the soil.

Land Preparation (30 minutes, Phillips and Bell): Due to time constraints we incorporated land preparation in the mornings activities. Trainers demonstrated and discussed planting in hills, ridges, and furrows and double digging.

Seed Selection and Storage and Plant Nutrition (2 hours, Phillips): The first part of the session addressed how to choose the plants you want to collect seeds from; how it is important to follow these plants from the time they are young as well as the time they bear fruit. A demonstration of how to save seeds from various plants was then conducted.

The second part of this session presented plant families and their respective nutrient needs, how to recognize some of the simple signs of nutrient deficiencies, how these signs can be confusing and contradictory in plants, and how to correct these difficulties. This subject was also addressed during the garden management session when chemical fertilizers were discussed.

This session was not presented as planned due to constraints detailed in the Workshop Schedule of Events.

Fruit Trees (1 hour; Mr. Youssef Thaim, Ministry of Agriculture): Mr. Thaim discussed the general nature of fruit tree cultivation, how to graft different varieties of fruit trees, planting techniques, and how to care for fruit trees. The nursery at the Hospital Gardens was used as a demonstration site. This material was not well received by

participants because of cultural values about trees. Trees are expensive and not as easy to grow as vegetables. Their role in a mixed garden was restated in response to this reaction.

Pest and Disease Management (1 hour; Mr. Youssouf Thaim, Ministry of Agriculture): The hospital gardens were used as a demonstration site to discuss pest and disease control measures. Chemical measures commonly used in Mauritania were discussed as well as biological and physical measures (good spacing, cleaning tools, checking for insects) that could be employed in household gardens.

Garden Management (2 hours, Phillips): This session was the preparatory session for the Action Plan exercise. We examined the necessary steps in establishing and maintaining a mixed garden. Among the elements that were presented were the review of the basic elements of a market garden, its structure, its purpose, what inputs are needed, labor needs, where to find seeds, intercropping, succession planting, pest management, and wind breaks. The primary points of garden care, thinning, weeding, proper watering, different types of simple irrigation systems, chemical fertilizers, and soil management were also reviewed.

#### Project Planning Etc.

Workshop Introduction (2 hours, Bell): The goal of the training was introduced and defined. The concept of hands-on, practical learning was emphasized as was the need to learn, listen, counsel, and encourage one another throughout the workshop. A task analysis of the workshop goal was conducted and actions to be achieved were listed through group participation. The proposed course work was reviewed in terms of the activities that had been discussed and their ability to aid us in working towards our overall goal. The use of the task analysis framework was initially confusing but provided a strong background for discussing the proposed list of sessions. The concept of task analysis was employed throughout the workshop and included in the Action Plan assignment.

Information on conducting task analyses was taken from *Helping Health Workers Learn* by David Werner and Bill Bower.

The Food Calendar for Mauritania (3.5 hours, Bell): The Food Calendar exercise followed the established lesson plan and provided information for planning the nutrition sessions of this workshop. The summary charts are presented at the end of this report.

Conducting this exercise in an Islamic culture provided two different results from previous experiences. First, labor is difficult to discuss and pin down in a stratified culture where the upper class is the group represented by the participants. Second, holidays where food is prepared have both negative and positive effects on nutrition.

Everyone eats really well on the day of the holiday but the following month is one of little household resources because of expenses for the holiday. It was not possible to chart these effects.

Extension Methods for Nutritional Gardening (2 hours, Bell): A skit on motivating people to begin to eat dark green leafy vegetables (Beet Greens) was given. Animation techniques at many levels were demonstrated during the skit including a visit from the Ministry of Social Affairs, a nutrition Volunteer, a representative of the Ministry of Agriculture, and an agriculture Volunteer. All the players acted from their professional perspectives and shared information, resources, and techniques related to the simple message - Eat Beet Greens. Two beet green dishes were prepared; a cold salad and a hot peanut butter sauce and offered as part of the skit. Twelve of the thirteen participants tasted both dishes and found them very palatable. Methods of preparation were discussed.

Action Plan Assignment and Presentations (7 hours, Bell): Participants were to work with their counterparts and come up with a plan of action which could be effected in the next year. In doing this they were to state their goal. A task analysis was to be prepared based on their goal.

The presentations represented realistic projects which related to our workshop goal. They appropriately represented the skill levels of the participants and addressed some very basic and important problems in conducting these specific projects. Most participants chose to work with people who already had gardens, introducing a few new gardening techniques but focusing on nutrition issues.

The task analysis model was easy to illustrate and provided participants with a simple framework for organizing their ideas and activities.

## WORKSHOP PREPARATION

Three days of briefing were held in Washington, D.C., primarily with Peggy Meites and Richard Record, in order to develop strategies and workshop content that might meet the special needs of the workshop in Mauritania. The primary focuses of that work were:

1. Meeting the in-country objective of developing skilled personnel to incorporate the IST material in the PST for Health Volunteers.
2. Developing new skills for both Host Country Nationals and Peace Corps Volunteers as trainers and participants.
3. Achieving a complimentary blend of nutrition and agriculture lessons within the brief span of the workshop.

Ten days of pre-workshop preparation time was available in Mauritania for the further development of the workshop. This period of time provided for the smooth adjustment to a new and difficult environment.

Several problems surfaced during the pre-workshop preparation period which centered around a basic miss-communication between Peace Corps Washington and Peace Corps Mauritania about what was to be achieved with this workshop and how it was to be done. This confusion was complicated by the fact that Becky Raymond had responsibilities that prevented her from participating in the planning phase of the workshop (as she had indicated by cable before the workshop began). The basic problems were as follows:

1. What the roles and skill level of the consultant were and their appropriateness to in-country needs.
2. The role of Host Country Nationals in the training process.
3. The role of the Volunteers as trainers in the workshop.

While it was expected that a Host Country National expert in agriculture would be on the training staff this was not understood to be the case by the in-country staff. This person had been identified by cable but the desired degree of his involvement in the workshop was unclear. Arrangements for his participation had not been finalized upon the arrival of the consultant and attempts to contact him by telegram in another city in Mauritania failed. In addition Host Country Ministries had been avoided as resources in order to reduce complications. As a result no Host Country Nationals were brought into the training staff as more than guest speakers.

The volunteer trainers which were to be involved in the workshop were not aware of their roles as the primary trainers (in order to develop skills for the PST) and had not been prepared for the intensity of work that was necessary. In addition, the lack of a Host Country

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National, skilled in agriculture put the full burden of training this material on David Phillips, a PCV. This was not foreseen by Becky Raymond since she expected to get a consultant with the same skills as the consultants she had had the year before. This problem was not foreseen by Washington Staff because they expected the HCN staff person to be on board.

The ability of the workshop trainers (Phillips, Florde, and Bell) to work as a cohesive team during this pre-workshop phase was severely hampered by the Volunteers expectations of their roles in the workshop and the amount of time they had allotted to preparation for the workshop based on their understanding of their roles. David Phillips was unable to arrive in Nouakchott until four days before the workshop and had other responsibilities beyond those of the workshop during this period of time.

## EVALUATIONS

### Daily Evaluation

A daily evaluation scheme was followed as established the year before. At the end of every day the group was to meet without the trainers, review the day's work for good points, those points that needed work, and any other comments. After their review one individual was to be sent to the trainers to report their findings.

This system worked well for the first week and then fell apart as the schedule became complicated due to unforeseen events. There was also a certain resistance to conducting the meetings in this fashion after the first week. Participants felt that the process took too long and got bogged down in pointless discussion when left on their own. They preferred open discussion with the trainers present. In fact no substantial problems were raised during these evaluations even though the workshop did not run smoothly because of logistical constraints. In part, this is due to the fact that problems were detailed and discussed as they came along, and also because the participants were patient and understanding of the events outside our control.

### Workshop Evaluation

A written evaluation was conducted on the last day of the workshop. The evaluations were very positive and indicated that the participants learned new skills which were appropriate to our goals in conducting the workshop. The overall evaluation form is followed by a summary of the remarks. The second form is a listing of the courses with scaled response choices. The responses are summarized on that form.

Indiquez si vous êtes:  un homologue  un volontaire

1. Les séances étaient:  trop simples  appropriées  trop difficiles
2. La séquence des séances étaient:  complimentaires  confuses
3. Les formateurs étaient:  bien préparés  bien organisés  concernant besoins et intérêt du groupe  
 ou non  ou non  
et les traducteurs:  bons  acceptables  ou non
4. Est-ce que vos besoins et vos intérêts étaient remplis? Expliquez.

5. Quelles étaient les 3 meilleures choses que vous avez retenues?

6. Quelles étaient les 3 choses moins nécessaires selon vous?

7. Est-ce qu'on doit changer la durée du stage? Les jours de repos? Les heures des séances? Expliquez.

8. Est-ce que vous pouvez nous conseiller comment nous pouvons améliorer le programme?

9. Comment avez-vous trouvé les déjeuners?

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1. The classes were
- 98%(12) appropriate in their level of difficulty
  - 8%( 1) no response
2. The sequence of classes was
- 84%(11) complimentary
  - 12%( 2) confusing
3. The instructors were
- 92%(12) well prepared
  - 8%( 1) no response
  - 61%( 8) well organized
  - 24%( 3) no response
  - 15%( 2) not well organized
  - 46%( 6) concerned about the needs and interests of the group
  - 46%( 6) no response
  - 8%( 1) not concerned about the needs of the group
- 3a. The translators were
- 38%( 5) good
  - 31%( 4) acceptable
  - 31%( 4) no response
4. Were your needs and interests met?
- 85%(11) positive response
  - 7.5%(1) negative response
  - 7.5%(1) did not respond to the questions asked

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5. The three best things in the training were (only those with a response value of at least 3 are listed):

Food Drying	10 (76% of the participants)
Nutrition	4 (30%)
The Food Calendar	3 (23%)
Seed Selection and Saving	3 (23%)
Preparing a Good Meal	3 (23%)
Soil Preparation and Improvement	5 (38%)

6. The three least essential classes were (only those with a response value of at least three are listed):

Fruit Trees	5 (38%)
Reforestation	3 (23%)

7. Should the duration of the training be changed? The days off? The hours of class work? Explain.

The workshop was too long in the number of days	10 (76%)
Need more time off for business as well as all day Friday off	10 (76%)
Too many logistical problems getting to the garden	3 (23%)

8. Can you indicate how the program could be improved? (only responses with a value of 2 or more are listed)

Do not do it in Nouakchott	2 (15%)
Garden too far from the class	2 (15%)
Do not have it in the Maison de Passage	2 (15%)

9. How were the lunches?

Positive response	13 (100%)
Too spicy	3 (23%)

Notre but tout bien considéré, indiquez si chaque séance est très intéressante, moins intéressante, ou inapplicable.

N=13

Calendrier Alimentaire en Mauritanie / = no response			
très intéressante 4 (30%)	intéressante 6 (46%)	moins intéressante 2 (15%)	inapplicable
La Nutrition			
très intéressante 11 (85%)	intéressante 2 (15%)	moins intéressante	inapplicable
Séchage des Aliments			
très intéressante 11 (85%)	intéressante 2 (15%)	moins intéressante	inapplicable
Vulgarisation du Jardinage Nutritionnelle / = no response			
très intéressante 3 (23%)	intéressante 5 (39%)	moins intéressante 4 (30%)	inapplicable
Comment Préparez un bon Repas			
très intéressante 12 (92%)	intéressante 1 (8%)	moins intéressante	inapplicable
Lutte contre les ravageurs			
très intéressante 5 (39%)	intéressante 4 (30%)	moins intéressante 4 (30%)	inapplicable
Préparation du sol et semis / no response			
très intéressante 7 (53%)	intéressante 4 (30%)	moins intéressante 1 (8%)	inapplicable
Le Jardinage Mixte / no response			
très intéressante 5 (39%)	intéressante 5 (39%)	moins intéressante 2 (15%)	inapplicable
La repiquage 2 = no response			
très intéressante 6 (46%)	intéressante 5 (39%)	moins intéressante	inapplicable
Amélioration de la terre /			
très intéressante 9 (69%)	intéressante 4 (30%)	moins intéressante	inapplicable
Préparation de la Terre			
très intéressante 6 (46%)	intéressante 6 (46%)	moins intéressante 1 (8%)	inapplicable

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2 = NO RESPONSE

	très intéressant	intéressant	moins intéressant	inapplicable
	3 (23%)	5 (39%)	3 (23%)	
Les arbres de fruit <del>et le reboisement</del>				
très intéressant		intéressant 11 (85%)	moins intéressant 2 (15%)	inapplicable
Selection des Semences				
très intéressant	4 (30%)	intéressant 9 (69%)	moins intéressant	inapplicable
Nutrition des plants				
très intéressant	6 (46%)	intéressant 5 (39%)	moins intéressant 2 (15%)	inapplicable
Gestion et ent <sup>et</sup> retien du jardin				
très intéressant	2 (15%)	intéressant 9 (69%)	moins intéressant 2 (15%)	inapplicable
Plan des Actions				
très intéressant	7 (54%)	intéressant 5 (39%)	moins intéressant	inapplicable 1 (8%)
Presentation des plans				
Très intéressant	4 (30%)	intéressant 4 (30%)	moins intéressant 5 (39%)	inapplicable

## CONCLUSIONS AND R

The conclusions and recommendation made here are the result of discussions with Michele Florde, David Philips, and Tawel Ahmed and the workshop evaluations.

1. That there should be increased involvement of Moustapha Sidat (APCD/agriculture) in the planning phases of this workshop. In addition there should be increased involvement of resource people in the Ministry of Agriculture, Rural Development, and Natural Resources to provide a better integrated resource base. Mr. Thaim, who was a guest speaker is highly recommended for further and more intense involvement in this workshop as is Madame Blal, a participant this year from the Ministry of Social Affairs.
2. That all training staff be together for the entire pre-workshop preparation period with a minimum of outside responsibilities.
3. That workshop logistics be such that garden site and classroom site are within walking distance.

It is also the conclusion of this consultant that the objective to develop skills to incorporate the materials of this workshop in the PST on a regular basis was not achieved. While Michele Florde and David Phillips are to be congratulated on the success with which they managed their sessions and contributed to the success of the workshop, the overall concepts embodied in the workshop, and the ability to plan and make decisions based on those concepts, were not developed. Given the crisis nature of our work (based on poor preparation time and insufficient resources), a lack of materials to work from in planning future activities concerning this workshop, and limited development experiences from which to draw, it is unreasonable to expect that they would have developed these skills. In addition, while they will be able to work in the PST this year they will not be available for future PSTs. For these reasons it is recommended that in order to institute the Better Nutrition through Mixed Gardening Workshop as part of the PST for health volunteers, that HCNs be trained who have a broader experience base in decision making and technical experience, and who will be available over a number of years.

The workshop was a success for the participants. Peace Corps Volunteers and Host Country Nationals developed new understandings and skills related to nutrition and agriculture which they felt they would be able to use in their future work. There was a keener understanding of nutritional problems and the development of skills and techniques that could be used to address those problems. The workshop ended on an upbeat and participants were eager to return to their posts to implement their new ideas.

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## WORKSHOP SCHEDULE OF EVENTS

### Thursday the 16th

- 9:00 - 11:00 Workshop Introduction
- 11:00 - 12:00 The Food Calendar for Mauritania
- 12:00 - 3:00 Lunch and Siesta
- 3:00 - 5:30 Food Calendar Continued
- 5:30 - 6:00 Daily Evaluation

### Friday the 17th

- 8:00 - 12:00 Garden Bed Preparation (Garden)
- 12:00 - 12:30 Travel Time
- 12:30 - Lunch and open afternoon

### Saturday the 18th

- 8:00 - 10:00 Visit to the Hospital Gardens
- 10:00 - 12:00 Characteristics of a Mixed Garden
- 12:00 - 3:00 Lunch and Siesta
- 3:00 - 3:30 Travel Time
- 3:30 - 5:00 Transplanting
- 5:00 - 5:30 Travel Time
- 5:30 - 6:00 Daily Evaluation

### Sunday the 19th

Easter Morning - open

- 3:00 - 5:00 Nutrition
- 5:00 - 5:30 Daily Evaluation

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Monday the 20th

Classes were canceled by a national holiday to celebrate an international conference of West African countries and the arrival of their presidents.

Tuesday the 21st

- 8:00 - 12:00 Soil Lab
  - Soil Improvement
  - Land Preparation (Garden)
- 12:00 - 12:30 Travel Time
- 12:30 - 3:00 Lunch and Siesta
- 3:00 - 5:30 Food Drying
- 5:30 - 6:00 Daily Evaluation

Wednesday the 22nd

- 7:30 - 10:00 Travel Time: Due to the departure of visiting presidents the traffic was halted for three hours. Both vehicles, a car and a Land Rover had already picked up the participants and left for the gardens but only the Land Rover made it all the way to the garden (via an alternate and sandy route which the car was unable to pass). The driver of the Land Rover did not return with the participants until 10:00 even though it was clear that the car could not pass. Sessions planned for the morning in the garden were conducted in half the time at the house once everyone was together again using flip charts and lecture instead of the planned hands on experience.
- 10:00 - 12:00 Seed Saving and Storage
  - Plant Nutrition
- 12:00 - 3:00 Lunch and Siesta
- 3:00 - 5:00 Extension Methods for Nutritional Gardening
- 5:00 - 6:00 Fruit Trees (Hospital Gardens)

Thursday the 23rd

- 8:00 - 9:00 Market Trip
- 9:00 - 10:00 Food Preparation
- 10:00 - 11:00 Scheduled for Pest Control at the Hospital Gardens. The speaker did not show up because his motor cycle broke down. The session was rescheduled for the afternoon.
- 11:00 - 1:30 Preparing a Good Meal
- 1:30 - 4:30 Siesta
- 4:30 - 4:45 Travel Time
- 4:45 - 5:45 Pest Control (Hospital Gardens)

Friday the 24th

- 7:30 - 8:30 Travel Time: Each way took an hour since we only had one car and had to shuttle people.
- 8:30 - 9:30 Garden Maintenance
- 9:30 - 10:30 Travel Time
- 10:30 - 12:30 Garden Management
- 12:30 - Lunch and open afternoon

Saturday the 25th

- 8:00 - 12:00 Action Plan Assignment
- 12:00 - 3:00 Lunch and Siesta
- 3:00 - 3:45 Tree Planting
- 3:45 - 4:30 Open Discussion on Cooperatives in RIM
- 4:30 - 5:30 Two Presentations of Action Plans
- 5:30 - 6:00 Oral Evaluation of Daily Activities

Sunday the 26th

- 8:30 - 9:00 Travel Time: Could not get cars before this hour to travel to the garden.
- 9:00 - 9:30 Garden Maintenance and Farewell
- 9:30 - 10:00 Travel Time
- 10:00 - 12:00 Action Plan Presentations
- 12:00 - 12:30 Written Evaluations
- 12:30 - Lunch and open afternoon
- 7:30 - 9:00 Dinner and Presentation of Diplomas

## THE FOOD CALENDAR EXERCISE SUMMARY SHEETS

The following pages are the summary sheets for the Food Calendar Exercise. The exercise was conducted by three different groups for the North, the East, and the River area. In general, agricultural work begins in May with field preparation and is followed with seeding in July and harvest in December and January. Gardening is begun in October with field preparation and seeding and harvesting is completed in April.

The following tables summarize the knowledge of the workshop participants. For any variable a negative sign indicates a problem for that period of time while a positive sign indicates that there is no problem. These signs must be interpreted differently for each class of variables. For example, a negative sign after a food indicates that it is not available and a problem in food availability may be indicated. A negative sign after a disease indicates that it is prominent at that time and a problem.

HL

Au Nord

	Jan	Feb	Mars	Avril	Mai	Juin	Juil	Aout	Sept	Oct	Nov	Dec
Le Temps												
Chaleur	/froid/ frais /						chaud			/frais / froid		
Pluie										/	pluie /	
l'Eau	+++++											
Fruits												
Dattes												
Pasteques	+++++											
Jujubes	+++++											
Legumes												
Carottes	+++++											
Tomates	+++++											
Salade	+++++											
Oignon	+++++											
Betteraves	+++++											
Navets	+++++											
Radis	+++++											
Menthe	+++++											
Viande												
Chameau	+++++											
Chevre	+++++											
(a Chinguetti)	++ __ ++ __ ++ __ ++ __ ++											
Ceeals												
Ble	+++++											
Orge	+++++											
Riz	+++++											
Boissons												
Lait (chameau, chevre)	+++++											
Garess	(fabriquer )+++++(fabrquer )											











## Workshop Participants

### Participants:

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