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## Evaluating the Capacity Building Needs of Agricultural Science Teachers' Towards the Millennium Development Goals in Delta Central Senatorial District, Nigeria

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### **Abstract**

This research work is aimed at evaluating the capacity building needs of Agricultural science teachers towards the Millennium Development Goals. Two research questions and one hypothesis were raised to guide the study. The sample size consist of two hundred (200) agricultural science teachers sampled from a population of five hundred and twenty (520) agricultural science teachers from all the public secondary schools in Delta Senatorial District using purposive and accidental sampling techniques. Descriptive survey research design was adopted for the study. The instrument used was the Capacity Building Needs of Agricultural Science Teachers towards the Millennium Development Goals Questionnaire (CBNASTMQ) which was duly validated and tested for reliability with adequate indices. Data collected were analyzed using mean ( $\bar{x}$ ) and standard deviation (SD) for the research questions, and t-test for the hypothesis at 0.05 level of significance. The findings showed that the competences needed by agricultural science teachers for the achievement of the Millennium Development Goals include: Programme planning and development, Instructional execution (teaching), Guidance, Social community relations, Young Farmer's clubs, Professional task. Supervising occupational experience. Working with the community. Adult Education, School discipline, and adequate knowledge of Agricultural Science .The ways to achieve capacity building needs include: professional organizations, teachers' conferences, in-service training programmes, group interaction, workshops, seminars, field trips, among others. Recommendations include that government should put in place programmes that will help to build the capacity needs of Agricultural Science teachers, among others.

**Keywords:** Capacity, Capacity building, Needs, Capacity building needs. Agricultural science, Agricultural science teachers.

The capacity building needs of Agricultural science teachers' towards the Millennium Development Goals (MDGS) in Delta Senatorial District in particular, has become a matter of great concern.

In September 2000, 192 United Nations member states and about 23 International Organizations adopted a resolution on eight goals. These goals known today as "Millennium

Development "Goals" are aimed at promoting development and eradicating extreme poverty all over the world especially among poor countries (Akamobi, 2009).

The target year for the achievement of these goals was 2015. According to Asomba (2012) the Millennium Development Goals are to:

- Eradicate extreme poverty and hunger.
- Achieve universal primary education.
- Promote gender equality and empower women.
- Reduce child mortality rates.
- Improve maternal health.
- Combat HIV/AIDS, malaria and other diseases.
- Ensure environmental sustainability.
- Develop a global partnership for development.

These goals are laudable and the member nations started pursuing these goals since 2001. Unfortunately, the awaited year 2015 has come and gone, but the expected progress seems not to have been made in Nigeria. For example, it is difficult to eradicate poverty where majority of Nigerians are still in abject poverty and inflation is at the peak. According to Akamobi (2009), about 80% of rural dwellers are poor, elderly, peasant farmers, most of whom cannot afford one bag of fertilizer per year not to talk about other improved production techniques.

United Nations Development Programmes (UNDP) (2006), stated that 54.4% of Nigerians live below the poverty line and that disaggregated indicators of school enrolment, adult literacy rate, food intake, access to water, infant and maternal mortality rates and social indicators paint equally dismal pictures, all pointing to the enormity of the task of achieving the Millennium Development Goals (MDGs). According to Otite (1995), Makoju (2006) and Iganiga (2006), eradicating poverty is regarded as the most important goal of human development. Indeed, it is now widely believed (Chambers, 1995; Umoren, 2001; National Planning Commission (NPC), 2004; and Yusuf, 2004) that at its core, development must be about improvement of human well being, removal of hunger, diseases and promotion of productive employment for all. Obatoko (2005) and Chigbue (2005) lend credence to the foregoing when they suggested that a Nation's first goal must be to end poverty and satisfy the private needs for all its citizens in a way that will not jeopardize the opportunity for the future generations to attain the same objective.

Nigeria has high potential for attaining the Millennium Development Goals of eradicating extreme poverty and hunger and achieving universal primary education, especially in Delta Central Senatorial District. One way of achieving these goals is through production of quality teachers in general and quality agricultural science teachers in particular by building their capacity needs.

Education is a powerful instrument for reducing poverty and inequality, improving health and social well-being and laying the solid basis for sustainable economic growth. In an increasingly complex, knowledge-dependent world, primary education, as the gate way to higher levels of education must be the first priority (The World Bank, 2010).

Since 1990, the world has promised that all children would be able to complete a full course of primary education (The World Bank, 2010). Education has the universal function of contributing to the perpetuation of societies by transmitting their ideas,

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values, norms, from generation to generation and preparing the young for active role in the future. Education is therefore a reflection of the culture itself in the complex and changing societies; it displays some of the value conflicts and strains between real ideal norms that are typical to all cultures. Since social change is an inevitable part of societies, especially complex societies, education does more than merely transmitting the accumulated wisdom of the past (Fafunwa, 1974).

An ideal education medium should help the beneficiaries develop abilities, attitudes and other forms of behaviour which are positive values of the societies in which they live, thus preparing them for effective living. The purpose of education is clear. Functionalism is the main guiding principle. However, secondary schools host a larger population of youths, these youths if well equipped in agricultural science would be of immense contribution in poverty and hunger reduction. The teacher is the key to the attainment of universal basic education. According to Akamobi (2009), a teacher of agriculture apart from teaching the student in the school, is also a counselor, a motivator, and a community leader who can use his skills in teaching both the students and adults in the community where he lives. According to Clouse (1985), every active agricultural teacher should be an effective teacher: liberally educated; current in subject matter and its pedagogy; aware of what is expected of teachers and schools; skilful and conscientious; respectful towards students and concerned about their welfare; and actively involved in faculty, professional and community affairs.

Thus, Egbule (1995) identified 27 occupational tasks that teachers of agriculture should perform and grouped them under programme areas: programme planning and development; instructional execution (teaching); guidance; school community relations; young farmer's club; professional tasks; supervising occupational experience; working with the community; adult education and school discipline. For a teacher of agriculture to be able to function effectively he/she needs to be competent in the above areas in order to be able to achieve the Millennium Development Goals.

Competency in the view of Mulder (2001) is the ability to do something successfully or efficiently with little or no mistake. According to OEaitan (2003), to be competent means that an individual has acquired the knowledge, skills, attitudes, and judgments which he requires in order to perform successfully at a specified proficiency level in a given work. To acquire such competencies to function effectively towards the achievement of the Millennium Development Goals in Delta Central Senatorial District, the teacher of agriculture needs to build their capacity towards the task to be accomplished.

The quality of an agricultural science teacher is a determinant of the quality of the educational system. According to Danmole (2011), teachers constitute the human resources required for the facilitation of achievement of the objectives of the Basic Education Curriculum. Since what Agricultural science teachers do in the classrooms and during practicals are largely dependent on what they know, capacity building for teachers is imperative for the achievement of the millennium development goals.

Tenny and Berky (1981); and Egbule (2004) summarized the programmes and activities that can aid teachers to improve professionally and thus building their capacity so as to achieve the millennium development goals as follows:

- Professional organizations
- Teachers Conferences
- In-Service Training
- Group Interaction

Others are workshops, seminars, constant use of library and consulting current books, newspapers, bulletins and magazines in relevant fields; upgrading oneself academically by enrolling in graduate work; always listening to agricultural radio and TV programmes; periodic visit to other schools. Department of Agricultural and Research Institutes; traveling and reading wisely; and accepting leadership positions in organizations committed to improvement of agricultural education. Statement of the Problem

It is observed that most agricultural science Teachers have not updated themselves in line with current development in the area of Agriculture to meet the millennium development goals. Education is not only a tool for the eradication of illiteracy but also a major and the single tool for manpower development. This also implies that in our jet age, no developing country can achieve the so much cherished Millennium Development Goals without building the capacity needs of teachers. Therefore, the whole process of manpower development is partly a function of teacher's competencies.

Parents and guardians alike know the value of education as a vital instrument for the achievement of the Millennium Development Goals and hence, they send their children or wards to school. The attainment of the Millennium Development Goals of eradicating extreme poverty and hunger and achieving universal primary education depends on mechanisms for boosting agriculture in the country and production of qualified teachers especially in Delta Central Senatorial District.

However, the challenge of inadequate competent teachers in the country is manifestly at the root of the problem. To produce competent teachers, there is need to build their capacity needs so as to be able to function effectively towards the achievement of the goals. The capacity building needs of Agricultural science teachers have become a major factor influencing teachers' competencies towards achieving the Millennium Development Goals. Hence the problem of this study can be put in a question form such as "What are the capacity building needs of agricultural science teachers towards the millennium development goals in Delta Central Senatorial District, Nigeria?". This question was broken down into the following research questions.

### **Research Questions**

The following research questions were raised for the study.

- What are the various competencies needed by agricultural science teachers for the achievement of the millennium development goals?
- What are the ways to achieve capacity building needs of agricultural science teachers to develop such competencies?

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**Research Hypothesis**

- There is no significant difference between the various competencies needed by male and female agricultural science teachers for the achievement of the millennium development goals.

**Methodology**

The study made use of descriptive survey design. The population of the study consists of five hundred and twenty (520) Agricultural science teachers from public secondary schools in Delta Central Senatorial District, out of which a total of two hundred (200) Agricultural Science teachers were sampled using purposive and accidental sampling techniques.

The instrument of data collection was a questionnaire titled: Capacity Building Needs of Agricultural Science Teachers Toward The Millennium Development Goals (CBNASTMQ). It was validated by three lecturers in the Department of Vocational Education (Agric. Science Unit), Delta State University, Abraka, and the test-retest reliability technique was used to obtain a coefficient of 0.85. The data was analyzed with simple mean ( $\bar{x}$ ) and Standard Deviation (SD) for the research questions and t-test for the hypothesis at 0.05 level of significance. Five (5) point likert type scale technique of Strongly Agreed (5), Agreed (4), Undecided (3), Disagreed (2) and Strongly Disagreed (!) was used to obtain a criterion mean ( $\bar{x}$ ) of 3.00 which form the bases for agreement and disagreement.

**Results**

Research Question 1: What are the various competencies needed by agricultural science teachers for the achievement of the millennium development goals?

**Table 1:** The various competencies needed by agricultural science teachers for the achievement of the millennium development goals.

S/N	Items	Mean ( $\bar{x}$ )	SD	Remark
1.	Programme planning and development	4.97	0.18	Agreed
2.	Instructional execution (teaching)	5.00	0.00	Agreed
3.	Guidance	4.57	0.77	Agreed
4.	Social community relations	3.00	0.86	Agreed
5.	Young Farmers' Clubs	3.25	1.08	Agreed
6.	Professional tasks	4.93	0.25	Agreed
7.	Supervising occupational experience	4.97	0.18	Agreed
8.	Working with the community	3.20	0.76	Agreed
9.	Adult education	4.77	0.57	Agreed
10.	School discipline	5.00	0.00	Agreed

11.	Adequate knowledge of agric. sc.	4.97	0.18	Agreed
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S.D= Standard Deviation

Table 1 presents the response of the respondents regarding the competencies needed by agricultural science teachers for the achievement of the millennium development goals. The results revealed that respondents agreed with all the stated items from number 1 to 11. As shown in table 1, the highest response was 5.00 that agricultural science teachers needs competencies in instructional execution (teaching) and school discipline, followed by mean (x) response of 4.97 that agricultural science teachers needs competencies in programme planning and development, supervising occupational experience, and adequate knowledge of agricultural science. The respondents also agreed that agricultural science teachers needs competencies in carrying out professional tasks (4.93), adult education programme (4.77), guidance (4.57), Young Farmers' Club (3.25), working with the community (3.20) and in social and community relations (3.00).

This signifies that most of the respondents agreed that the competencies needed by agricultural science teachers had positive influence on the achievement of the Millennium Development Goals.

**Research Question 2:** What are the ways to achieve the capacity building needs of agricultural science teachers to develop such competencies? Table 2: The ways to achieve the capacity building needs of agricultural science teachers.

S/N	Items	MeanO)	SD	Remark
1.	Professional organizations	4.97	0.18	Agreed
2.	Teachers conferences	5.00	0.00	Agreed
3.	In-service training programmes	4.93	0.25	Agreed
4.	Group interaction	4.87	0.35	Agreed
5.	Workshops	4.97	0.18	Agreed
6.	Seminars	4.77	0.57	Agreed
7.	Field trips	4.57	0.77	Agreed

S.D= Standard Deviation

Table 2 shows the response of the respondents regarding the ways to achieve capacity building needs of agricultural science teachers in developing the competencies that will lead to the achievement of the millennium development goals. The results in Table 2 revealed that respondents agreed with all the stated items from number 1 to 7. The responses given by teachers (respondents) were being able to respond to teachers' conferences (5.00), professional organizations (4.97), workshops (4.97), in-service training programmes (4.93), group interaction (4.87), seminars (4.77) and fieldtrips (4.57) as the various ways that agricultural science teachers can build their capacity in order to achieve the millennium development goals.

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**Testing of Hypothesis**

There is no significant difference between the various competencies needed by male and female agricultural science teachers for the achievement of the millennium development goals.

Table 3: t-test summary of the difference between the various competences needed by male and female agricultural science teachers.

Variable	Number of sample	Mean(x)	SD	Df	t-cal.	t-crit.
Male	123	9.89	0.32	198	2.098	1.960
Female	77	10.00	0.00			

t-calculated - 2.098

t-critical -1.960

Degree of freedom (df) = 198

Since the calculated t-test value 2.098 is greater than the critical table value 1.960, we reject the null hypothesis. In other words, there is a significant difference between the various competencies needed by male and female Agricultural science teachers for the achievement of the millennium development goals.

**Discussion of Results**

The result in Table 1 shows that Agricultural science teachers needs to be competent in areas of programme planning and development, instructional execution (teaching), guidance, social community relations, Young Farmers' Clubs, professional tasks, supervising occupational experience, working with the community, adult education and school discipline; as this will serve as a means of improving Agricultural education towards the achievement of the MDGs in Nigeria. This result is in line with Egbule's (1995) identified occupational tasks that teachers of Agriculture should perform.

Table 2 shows that Agricultural science teachers can build their capacity by engaging in professional organizations, teachers' conferences, in-service training programmes, group interaction, workshops, seminars and field trips. This result agrees with the numerous programmes and activities that can aid teachers' professional improvement as posed by Egbule (2004).

Table 3 shows that the null hypothesis was rejected. This implies that there is a significant difference between the various competencies needed by male and female Agricultural science teachers for the achievement of the millennium development goals.

**Conclusion**

Nevertheless, there are varieties of activities that can build the capacity of agricultural science teachers towards the achievement of the millennium development goals. Such activities which was also noted by the researcher include professional organization; teachers conferences; in-service training programmes; group interaction; workshops; seminars; field trips;

constant use of library and consulting current books, newspapers, bulletins and magazines in relevant fields; upgrading oneself academically by enrolling in graduate work; always listening to agricultural radio and TV programmes; periodic visit to other schools, Department of Agricultural and Research Institutes; traveling and reading wisely; and accepting leadership positions in organizations committed to improvement of agricultural education. However, teachers' conferences; in-service training programmes; seminars; field trips; and periodic visit to other schools, Department of Agricultural and Research Institutes appear to be more effective in Delta Senatorial District.

### **Recommendations**

In order to build the capacity of teachers towards the achievement of the millennium development goals, the following recommendations were made.

- The researcher is hereby suggesting to the government and other appropriate authorities to encourage as many programmes as possible that will help to build the capacity needs of agricultural science teachers in order for them to be able to achieve the millennium development goals. The government can render assistance in this area by adequately funding teachers' education programmes especially in agriculture.
- The researcher is also suggesting that teachers, especially those in the field of agriculture should be fully involved in activities that will improve their skills and competencies so as to achieve vocational education goals and thus, achieving the millennium development goals.

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