FACTORS DETERMINING INTEGRATION OF DISABILITY MAINSTREAMING IN AGRICULTURAL EXTENSION SERVICES IN THE MINISTRY OF AGRICULTURE. A CASE OF MACHAKOS COUNTY, KENYA

BY

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2013
DECLARATION

This research project is my original work and has not been presented for a degree in any other institution.

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This research project has been submitted for examination with my approval as the University of Nairobi supervisor.

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DEDICATION

I dedicate this research project to my lovely mother Aphline Onyango, my wife Judith Ochieng and the children; Erin Lina and Sophie Omondi for their understanding and support during the time I worked late and on weekends to produce this research report. Their overwhelming support and patience gave me the will to succeed.
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<td>DIVSMS</td>
<td>Divisional Subject Matter Specialist</td>
</tr>
<tr>
<td>DSMS</td>
<td>District Subject Matter Specialist</td>
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<tr>
<td>FAO</td>
<td>Food and Agricultural Organization</td>
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<td>FEO</td>
<td>Frontline Extension Officer/Worker</td>
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<td>FGDs</td>
<td>Focus Group Discussions</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GOK</td>
<td>Government of Kenya</td>
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<td>IFAD</td>
<td>International Fund for Agriculture Development</td>
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<td>IFLA</td>
<td>International Federation of Library Associations</td>
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<tr>
<td>KNBS</td>
<td>Kenya National Bureau of Statistics</td>
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<tr>
<td>MDG</td>
<td>Millennium Development Goal</td>
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<td>MOA</td>
<td>Ministry of Agriculture</td>
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<td>NCPWDs</td>
<td>National Council for People with Disabilities</td>
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<td>NGOs</td>
<td>Non-Governmental Organization</td>
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<td>PWD</td>
<td>Persons with Disabilities</td>
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<tr>
<td>SAEKCCP</td>
<td>Semi-Arid Eastern Kenya Crop Protection Promotional Project</td>
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<tr>
<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
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<td>WHO</td>
<td>World Health Organization</td>
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ABSTRACT

Government Institutions are in the core business of providing essential services to the citizens in Kenya as a matter of necessity and right amidst rising populations of people with disability in rural areas. Previous studies conducted on disability mainstreaming have been mostly done in the developed world which embraced the medical and charity models of disability mainstreaming. However, many studies on disability mainstreaming have not directly considered disability in agriculture. This study therefore sought to assess the extent to which disability mainstreaming is integrated in agricultural extension services offered in Machakos County, Kenya using the social model. A descriptive survey research design was used that relied on both qualitative and quantitative data with a hundred and eight agricultural extension staff being the target population. Primary data was collected using questionnaires and focus group discussions and then analyzed using descriptive statistics to discover themes, patterns, associations, explanations and general statements about the relationships among categories of data. The results of the study indicate that the greatest challenge facing integration of disability mainstreaming in agricultural extension services in Machakos County is low awareness and training on disability which finally results in low attitudinal change among the staff. The extension coordination offices in their current states cannot also adequately provide for essential services to suit the physical needs of people with disability. Information dissemination was established to be largely through use of text based learning materials, thus inhibiting personalized learning and the provision of alternate formats when required by people with disability. The development of appropriate technologies by extension staff was inadequate and so people with disability could not immediately benefit despite their unique varied needs. From the study, it is recommended that the leadership of agricultural extension in Machakos County needs to enhance knowledge and skills of its staff on disability and inclusive development by providing trainings on disability awareness, improving physical environment, packaging and disseminating information in alternative forms and developing simple cost effective agricultural technologies for adoption by persons with disabilities. The study recommends that further research be carried out to assess the determinants of integration of disability mainstreaming in extension services, using the people with disability while applying the human rights based model. It also recommended that further research be carried out to determine other factors affecting research on appropriate technologies for integrating people with disabilities into mainstream society.
1.1 Background to the Study

It is estimated that about 15% of the world population that accounts for 650 million people, suffers one or more forms of disability which continues to impede their equal full participation in society like others (WHO & World Bank, 2011). This has slowed down empowerment efforts for people with disability through Agriculture based interventions since many of them experience social and economic exclusion resulting from their disability. (Steele, 2006) asserts that most initiatives undertaken in support of people with disability are piecemeal and short-term; representing small investments made on behalf of a handful of recipients over a limited period of time. This in essence has not been adequate because the seasonality of agriculture has only covered particular growing seasons or production intervals that funded empowerment projects offer in most developing countries. In Europe and America, people with disability have continued to access gainful employment and food through participation in Agriculture. The Food and Agricultural Organization (FAO) observes that about 75% of all disabled persons are located in the Asia and Pacific region and that at most 80 % are farmers, rural workers or disabled soldiers deriving their livelihood from Agriculture.

The government of Kenya views Agriculture as a key sector in the development of its national economy and considers it a reliable means of livelihood in rural areas. Food security and poverty reduction have been major concerns for the state agencies in Agriculture for the realization of the greater national vision of a prosperous nation for all citizens despite their physical abilities. Provision of Agricultural extension services in Kenya adopts a demand driven approach and is currently being done within the Agricultural Sector Development Strategy guidelines. All extension staff and the services they offer are guided by this overall National Policy document that envisions a food-secure and prosperous Kenya with an economic growth rate of seven per cent per year. This is to be achieved through tailor made extension services that facilitate implementation of innovative, commercially oriented and modern agriculture anchored on increasing productivity, commercialization and competitiveness of agricultural commodities, enterprises development and management of key production factors.
The output of the national extension services is expected to reduce the number of people living below absolute poverty lines to less than 25 percent and also food insecurity by 30 percent, to surpass the MDGs. It is supposed to also increase the contribution of agriculture to the GDP by more than 80 billion Kenya shillings per year as set out in the Kenya Vision 2030. To achieve this, a number of interventions have been identified that includes collecting, collating and disseminating information on domestic and international markets, developing appropriate technologies for the various agro-ecological zones, capacity building for farmers to enhance efficiency and effectiveness, mainstreaming disability, gender, HIV and AIDS, and other cross-cutting issues in development programmes. This is to be supported by installation and management of a well developed integrated information system that informs all agricultural programmes planning and management.

The Agriculture programmes currently being implemented are partially or wholly funded by the government and or donors, within specific projects whose activities form the bulk of the national extension services. Therefore there is an urgent need for effective agricultural extension services that are accessible to all citizens because these services are designed to deliver project goals identified in projects that operate within Pro-poor safety net programmes, Agricultural Productivity and Income Generating Programmes, and Long Term Agricultural productivity programmes.

According to the Kenya Population and Housing Census of 2009 Machakos County ranked position 9 out of 47 counties with disability prevalence amongst 4.07% of the total population in the county. This is in terms of all forms of disability that includes visual, mental, hearing, speech and physical or requiring self-care. The county was ranked position number 12 out of the 47 counties where a population of 2.48% showed disability specifically associated with hearing, speech and physical or requiring self-care. Agricultural extension service is part of the programmes that can ensure improved agricultural production and food security (Olubandwa et al, 2011). The World Bank in 2008, stated that the public service in many developing countries have continued to fund agricultural extension whereas extension workers have not been abreast of relevant emerging technological and social development issues. It is necessary for civil servants to be accountable to their clients and take up participatory approach to set foundation for broad based productivity growth. According to Food and Agriculture Organization of the United Nations 2006, persons with disabilities in
rural communities are the most disadvantaged people in the world and continue to face discrimination due to their disability and poverty. There is general consensus that people with disability need to be trained and involved in Agriculture to make a contribution to their own welfare. It is therefore important that such people access all support services to enable them learn by active participation. For an all inclusive participation in national development, government policies and programmes have to appropriately address disability issues to facilitate access of materials and devices that will enable persons with disabilities overcome constraints arising from their individual disability (The Kenya Constitution, 2010). In the Kenya government financial year 2009/2010, all ministries were required to mainstream disability in their programmes by formulating Disability Mainstreaming Policies as part of their performance contracts. They were also required to undertake a baseline survey on disability mainstreaming and to produce a report that recommends among others the training needs for the staff to enable them render effective service to persons with disabilities.

Most researchers undertaking disability studies in the context of the developing world have focused their efforts on key service provision sectors of education and health. This is shown by the works of Filmer (2008) who closely analyzed the linkages between disability, poverty and schooling. Groce and Bakshi (2009), Groce (2006), Dube (2006), and Ainscow and Miles (2009) have looked at issues of education reform with emphasis on inclusion and teachers’ attitudes towards people with disabilities in Asia and the Pacific. Onyango (2012), in the socio-legal critique of the legal framework for the promotion of rights of persons with disabilities in Kenya contributes to the African context of tackling disability mainstreaming through legal studies.

The study therefore intends to bring into perspective the extent to which Agricultural extension services offered by the Ministry of Agriculture, has integrated the special needs of the people with disability with regard to accessibility, information dissemination, technology development and transfer for food security and self reliance.
1.2 Statement of the Problem

In Kenya, agricultural extension services being offered are currently being implemented within specific projects embedded in programmes that are partially or wholly funded by the government and its international development partners. The projects’ activities form the bulk of the national extension services that aim at improving food security, income generation and wealth creation. People with disability in rural areas of the country continue to rely on relief food and charity from well wishers for their upkeep, despite the government efforts to reduce poverty. This is not sustainable. There is an urgent need to empower people with disability by including them into mainstream agriculture to participate in food production, income generation and create employment opportunities within the sector for their own benefit (FAO, 2006). In addition, efforts to improve the lives of people with disability continue from government agencies, NGOs and others through agricultural extension but the demand far exceeds available resources (Olubandwa et al, 2011).

This therefore calls for a disability-inclusive and responsive development even as the world attempts to achieve the Millennium Development Goals so that people with disability do not continue to suffer from discrimination based on society’s prejudice and ignorance.

Despite implementation of this policy, IFAD has reported that people with disability in arid and semi arid rural Kenya still stand the greatest risk of poverty where agricultural extension services are not easily accessible. (Kavoi, 2008) in the study to appraise the status of the SAEKCCP Project in Kenya, also found that more public extension workers and NGOs in project(s) are needed for the promotion and dissemination of validated agricultural research outputs and so implying the other requirement of training and deploying more extension providers in order to reach more poor farmers in the rural areas.

A well-functioning and accessible agricultural extension service operated by the public and private sectors is required for increased agricultural productivity to transform subsistence farming into modern and commercial farming, attain food security, improve incomes and reduce poverty (Government of Kenya, 2012).

This study therefore draws its rationale from the need to provide for the social and economic rights of persons with disability, given that many studies on disability issues have not directly considered the integration of disability mainstreaming in agriculture.
1.3 Purpose of the Study
The purpose of this study was to assess the factors determining integration of disability mainstreaming in Agricultural extension services by the Ministry of Agriculture in Machakos County, Kenya.

1.4 Objectives of the Study
The objectives of this study were

1. To establish the extent to which the level of awareness determines the integration of disability mainstreaming in agricultural extension services
2. To assess the extent to which the status of physical accessibility to support infrastructure determines the integration of disability mainstreaming in agricultural extension services
3. To find out the extent to which extension information dissemination determines the integration of disability mainstreaming in agricultural extension services
4. To establish the extent to which appropriate technology transfer determines the integration of disability mainstreaming in agricultural extension services

1.5 Research Questions
The study answered the following research questions,

1. How does the level of awareness determine the integration of disability mainstreaming in agricultural extension services?
2. What is the extent to which the status of physical accessibility to support infrastructure is determining the integration of disability mainstreaming in agricultural extension services?
3. To what extent is packaged and disseminated extension information affecting the integration of disability mainstreaming in agricultural extension services?
4. How does appropriate technology transfer determine the integration of disability mainstreaming in agricultural extension services?

1.6 Significance of the study
There is a bidirectional link between disability and poverty in developing countries whose economic development is mainly dependent on Agriculture. The United Nations Economics and Social Council has over time reiterated the need for mainstreaming disability in the
development agenda. This has been in response to the adoption of the resolutions of the Convention on the Rights of Persons with Disabilities drafted in December 2006 and effected in May 2008 by 155 countries, Kenya included.

This study was therefore important in the development context to contribute pertinent information to governments, international organizations, organizations of people with disability and civil society for consideration in their efforts towards achieving equality for people with disabilities.

1.7 Basic Assumptions of the Study

The government agricultural extension staff and their collaborators would give adequate information on the current state of affairs within their institution with regard to the integration of disability mainstreaming in relation to their work.

Support staffs are not directly involved in extension activities and so do not deal directly with farmers on technical issues.

1.8 Limitations of the Study

Impending technical staff movement out of the study area without equal numbers as replacements during the changeover to County governments can potentially reduce the target population under study, making it difficult to make generalizations of the study findings.

1.9 Delimitation of the Study

The study was carried out within Machakos County due to the researcher’s familiarity with the area and the proximity to existing agricultural extension service providers and collaborators who command a regional representation of key extension and research institutions.

1.10 Definition of significant terms

This section provides definition of significant terms that were used in the study.

Accessibility: Refers to the degree to which a product, device, service, or environment is available to as many people with disabilities as possible whenever they need it.

Agricultural Extension: Is the application of scientific research and new knowledge to agricultural practices through farmer or fisher folk education that involves communication
and learning activities organized by professionals from different disciplines, including crop
and livestock production, marketing, health and nutrition.

**Awareness:** Is the human ability to perceive, to feel or their cognitive reaction to the
condition of disability.

**Disability:** Visible physical and sensory impairments that limit activity and restrict
participation of an individual

**Disability mainstreaming:** Is the process of assessing the implications for disabled people of
any planned action, legislation, policies and programmes in all areas and at all levels with an
ultimate goal of achieving disability equality.

**Information packaging and dissemination:** Is the way the final message is constructed and
medium used in passing it to the targeted users.

**Mainstreaming:** Ensuring that persons with disabilities being enabled to benefit from all
social and economic aspects of development.

**Person with disabilities:** Refers to anyone challenged by visible physical and sensory
impairments, which limit their activity and restrict participation in personal development and
welfare.

**Technology development and transfer:** Is the generation and application of technologies or
prototype devices by researchers to address unmet needs of people with disabilities through
the synergistic matching of the capabilities to needs.

### 1.1 Organization of the study

This study is organized into five chapters. The first chapter gives a general background into
the subject of study provides focus on the objectives of the study with specific questions to be
answered. These objectives and questions developed provide an overview that facilitates
better understanding and requisite linkages to the importance of the study.

The second chapter explores and critically reflects on existing previous related works and
literature done on disability mainstreaming by scholars who have studied and or documented
pertinent issues on the study subject in different contexts. It also provides a conceptual
framework which outlines the relationship between the dependent and independent variables
identified as relevant to the study.
In chapter three the researcher delineates the study research design, target population, data collection instruments and methodologies. In this section, issues of how data analysis and presentation will be done are highlighted.

The fourth chapter describes the data collected and presentation, analysis and further interpretation. The analysis, presentation and interpretation of data in this chapter is focused on the findings on the extent to which awareness, accessibility, information dissemination and technology transfer have determined integration of disability in Agricultural extension services.

The fifth chapter of this study summarizes the findings and presents the final conclusions, recommendations and suggestions for further research on the factors determining integration of disability mainstreaming in agricultural extension services in the Ministry of Agriculture Machakos County in Kenya. The final part presents the list of references and appendices of relevant documents used in the study.
CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews available literature on the concept of disability and its relationship to poverty in the developing world to bring forth findings of previous studies. The focus of the review begins by examining theories of disability and associated models, then highlights the importance of agricultural extension to food security and finally interrogates the concept of disability mainstreaming from a development perspective. This chapter also provides the theoretical and conceptual frameworks which outline the relationship between the dependent and independent variables identified for the study and their indicators.

2.2 Definitions of Disability

In theory, the concept of disability has been defined by many scholars from different points of view, but the most common one is medically defined as a functional impairment. Impairment is defined as a form of biological, cognitive, sensory or psychological difference that is often defined within a medical context and disability is the negative social reaction to those differences (Sherry, 2007).

According to Stanford Encyclopedia of Philosophy, “disability” has been used either as a synonym for “inability” or as a reference to legally imposed limitations on rights and powers” since historical times. In essence, up until the year 2006, the Oxford English Dictionary recognized only these two senses of the term (Boorse, 2010). The World Health Organization International Classification of Functioning, Disability and Health (ICF, 2001) emphasizes that “disability is a dynamic interaction between health conditions and environmental and personal factors”. Braithwaite and Mont (2009) state that disability is not an “all or nothing” concept and can range from mild to severe, be constant or episodic. Furthermore, whether a person is considered to have a disability is highly dependent on their physical, cultural and legal environment.
2.3 Disability Theory and Models

Mor (2011), argues that disability studies focuses on the complex ways that economic relations, cultural meanings, social practices, and institutional settings participate in the disablement of persons. The rationale behind this reasoning is that disability studies is a socially constructed category, rather than an inherent, objective or fixed trait that resides in the disabled person. (Goodley, 2010) states that disability affects all humanity, overstepping class, nation and wealth and that many people will at some point become disabled. The WHO International Classification of Functioning model of 2001 views disability as an inclusive term for considering the interaction of impairment, body functions and structure, activity, participation against the wider context of personal and environmental factors (see Figure 2.1).

![Diagram of the International Classification of Functioning Model](image)

Figure 1: The International Classification of Functioning Model (WHO, 2001)
Peter et al, 2008 estimates that around 800 million people will suffer one or more forms of disability by the year 2015. In their description of the relationship of impairment to limitation, these views distinctly suggest the emergence of two perspectives that further culminate to four opposing models. i.e. the charity, medical, social and the rights based models of disability.

According to Monk et al (2009) the charity model views disability as a problem inherent in the person and that such people are regarded as ‘unfortunate’, ‘dependent’ or ‘helpless’. Due to their impairments they are assumed to be unable to contribute to society or support themselves and are instead long-term recipients of welfare and support provided by specialist organizations and not mainstream development. This argument perpetuates the idea of viewing disabled people as a separate group.

The medical model understands a disability as a physical or mental impairment of the individual and its personal and social consequences and so regarding the limitations faced by people with disabilities as resulting primarily, or solely, from their impairments (Christensen, 1996; Sachs, 2008). The medical model appears to support the correction of the biological condition through medical care or some form of compensation when that is impractical and; the minority group model appears to favour measures to eliminate or compensate for exclusionary practices and recognize their injustice; the human variation model appears to favour reconstruction of the physical and social environment to take into account a wider range of differences in human structure and function (Goering, 2010).

In contrast, the social model understands disability as a relation between an individual and their social environment: the exclusion of people with certain physical and mental characteristics from major domains of social life. Their exclusion is manifested not only in deliberate segregation, but in a built environment and organized social activity that preclude or restrict the participation of people seen or labeled as having disabilities (Wasserman et al, 2011). In this study, the researcher views these models as playing a complementary role towards comprehensive disability mainstreaming because either can easily be a consequence of the other. It is therefore arguable that the different models favour different responses to disability.

The rights based model demands that society has to change to ensure that all people, including those with disabilities have equal opportunities to participate and involves empowerment and accountability. In this case empowerment refers to the participation of people with disabilities
as active stakeholders and accountability relates to the duty of public institutions and structures to implement these rights and to justify the quality and quantity of their implementation. The principles of the social and rights-based model are also the basis of the UN Convention on the Rights of Persons with Disabilities and its Optional Protocol which came into force in 2008.

All these models seem to be anchored on the human rights principles that advocate for no exclusion or discrimination, hence the need for appropriate social response to mainstreaming disability in society.

This study therefore adopts the right based model of disability since the ultimate goal of disability mainstreaming is to have everyone equally participate in sustainable personal and national development within their ability, with no discrimination.

**2.4 Disability and Poverty**

Disability increases vulnerability to poverty, while poverty creates the conditions for increased risk of becoming disabled. This is due to additional costs incurred due to disabilities, discrimination in the labour market, access to education and assistive devices (Emmett 2006). The internationally recognized Food and Agriculture Organization of the United Nations in its work with disabled people concludes that persons with disabilities are capable of doing and successfully learning and applying new knowledge for income generation and improved livelihoods (FAO, 2006).

In their study of social assistance and disability in three African developing countries Marriot and Gooding (2007) found that disability organizations stress that social assistance must aim at empowerment and supporting capacities for independence. The study suggests that efforts towards disability mainstreaming to appropriately include disabled people faces several barriers related to access, including limited public information, physical inaccessibility, and bureaucracy.

It has been observed that individuals who are born with or later become disabled are more likely to become poor, not because of their disability but rather due to social marginalization. Such people have a significantly less chance of accessing health care, education or employment, which leads to poverty that eventually makes it difficult for them to work their way out of poverty (Mitra et al., 2009, Parnes 2009, Trani & Loeb 2012, World Bank 2007).
Ingstad and Grut, (2007) propose that disability is to be understood as an interaction between human functioning and an environment which does not account for different levels of functioning and that people with physical or mental limitations are often disabled not so much because of their functioning level. This is occasioned by their inability to have adequate access to education, labour markets and public services. In their analysis of the relationship between disability and poverty in Machakos District, Kenya they found that exclusion leads to poverty, which can further facilitate a more vicious circle of disability by making people continuously vulnerable to malnutrition, disease, and unsafe living and working conditions.

2.5 Awareness and Disability Mainstreaming

Lang and Murangira (2009) found that awareness affects disability mainstreaming efforts as illustrated by majority senior civil servants working within line ministries having very little appreciation and understanding of human rights-based approach to disability issues. Their study was a survey which focused more on the socio economic situation of the disabled people with not much to say about the people who are on the field to implement the proposed strategies. It also gave little attention to collaborating service providers who are actively involved with their support activities for the disabled people in Uganda. The researchers in this study therefore introduce a stakeholder approach to addressing disability mainstreaming in the agriculture sector, acknowledging that each stakeholder in extension has a unique service or product to offer for the benefit of people with disabilities in their area of work. In effect this supports the need for awareness and training as key ingredients towards achieving total disability mainstreaming. Jones and Webster (2006) in their analysis of case studies on disability mainstreaming in Asia state that “awareness without clear, practical and resourced follow-up action will not improve the lives of disabled people. It may even make matters worse by raising false expectations. There is no point starting sensitization within an organization unless we already have specific workplace or programme mainstreaming actions planned and budgeted to take place soon afterwards.” The authors’ analysis of the case studies in the handbook only looks at sensitization at workplace and assumes that raising awareness is an end in itself. This may not hold true because there must be some action beyond awareness creation within an organization. The handbook as an operational guide to disability mainstreaming raises a good argument that commitment and involvement of staff in
mainstreaming takes more than just training and therefore there is high chance of success when personal experience reinforces awareness.

The Kenya National Survey for People with Disabilities in 2008 reported that awareness affects disability mainstreaming and inclined its approach towards the medical model of disability. The socio-economic and cultural aspect of the survey only captured education and health information with brief mention of formal employment. To comprehensively address income generation, the researcher in this study strongly feels that agricultural sector as a potential source of self employment for persons with disabilities cannot be overlooked, hence the need for disability mainstreaming in the sector.

According to Katsui (2008), the progress and stagnation of disability mainstreaming is affected by personal or individual factors. The researcher states that only after the first proponents of disability mainstreaming in Japan came face to face with challenges resulting from their own situation did action on the same became a priority. This therefore brings into focus the issue of awareness before action. These initial proponents did not actually see a lot about their physical disabilities until they attended a conference where there was no facility to assist them easily move around the conference venue. The personal factors mentioned were a clear indication of the need for awareness in disability mainstreaming efforts. Lack of awareness makes most of the disabled people shy away from visiting government facilities except a few who do so while trying to access their pensions and free ration cards (Mohapatra, 2012). The research used qualitative interviews and quantitative data from secondary sources to assess opportunities and challenges in the livelihoods of disabled people in rural India.

Nyagudi (2012), a practitioner from the Kenya National Council for Persons with Disabilities in charge of mainstreaming disability issues, in her presentation on behalf of people with disabilities during the launch of people with disability web portal and e-accessibility workshop for persons with disabilities at Laico Regency, Nairobi observed that among the challenges facing disability mainstreaming is low awareness and education on disability which results in low attitudinal change. In the study to establish how disability awareness and sensitivity training in genetic counseling graduate programs in recent years has impacted genetic counselors’ personal perspectives and practices, Kline (2012) found that there is considerable variability in exposure to disability awareness issues, and varying levels of comfort with discussing disability related issues with clients.
Umalsova et al (2009) in the study of mainstreaming disability into disaster risk reduction in Nepal found that awareness raising on disability issues and the importance of mainstreaming requires actors to provide appropriate training and technical support and also accept greater accountability for using resources effectively for the whole population. The human rights based approach was used in the study and its conclusions allude to existence of attitudinal barriers within government employees that limit their active involvement in disability mainstreaming efforts by enhancing knowledge on how to work with PWDs. It is often difficult to identify people with disabilities in any given community especially if stigma exists about disability or it is believed to be caused by past wrongs or the work of evil spirits. In Nepal the government employees were facing challenges working with PWDs due to the people continuously accepting to identify themselves or family members as having a disability. The researchers concluded that employees under study did not have adequate skills to adequately communicate to PWD thus limiting their interaction to further explore areas of mutual concern to enable practical and sustainable disability mainstreaming.

According to Maya and Dalal (2008), to enhance active participation by project staff in disability mainstreaming programmes it is important first of all to interact with and understand the perceptions, attitudes and expectations of persons with disabilities. At the outset, efforts must be made to increase the familiarity of the project team on the subject through perspective building, developing a knowledge base, interacting with sectoral institutions and persons with disabilities. Using the social model of mainstreaming they argue that with greater awareness about these issues intrinsically exists a greater willingness to encourage social workers to encourage PWD participation in society through building trust and positive attitudes. The researcher in this study feels that awareness emerges as the key starting point for a mainstreaming initiative.

Daly et al (2007) explored the educational experiences of young people with physical disabilities in Dublin and found that in order for schools to mainstream disability, teachers must be willing and open to accept students with disabilities, and their additional needs, as part of their job role. They argue that for adequate mainstreaming to take place, attitudes towards people with disabilities needed to change and this could be facilitated through providing better information on the needs of people with physical disabilities. As a possible way forward they recommend the development of a system of peer education, where people
with disabilities themselves would be trained up to go into schools and talk directly to a group of students and teachers about their lives and success realized as a result of participating in mainstream education activities.

2.6 Physical Accessibility and Disability Mainstreaming

Komana (2006) used descriptive survey to undertake an evaluation of the employment strategies of persons with disabilities in South Africa and found that accessibility affected disability mainstreaming in the department of Agriculture of Limpopo University. The researcher reckons that persons with disabilities require to be given opportunity of access to buildings, special training that may involve the use of friendly machineries. The researcher recommends that the responsibility of initiating disability mainstreaming should lie with the administration heads as the people to lead the process to success in an organizational setup. These findings and recommendations reinforce the need to have disability mainstreaming in all government services including agricultural extension since extension directly deals with people of all social or medical fitness backgrounds.

Eide and Instand (2011) used disability case studies from developing countries in Asia and Africa to write the book, Disability and Poverty- A global Challenge. The book adopts the social model of disability and integrates the Millennium Development Goals especially goal number seven to highlight the importance of an accessibility environment to promote disabled peoples participation in economic and social activities. All the contributing writers in the case studies tend to agree that the issue of accessibility will continue to affect disability mainstreaming efforts.

Thematic Study adopting the social model of disability was used by the Office of the United Nations High Commission for Human Rights in 2009 in the study on enhancing awareness and understanding of the Convention on the Rights of Persons with Disabilities. The commission report recognizes accessibility in terms of accessible environment to be instrumental in the realization of the rights of persons with disabilities to independent living and full participation in all areas of life. The researcher in this study therefore acknowledges that states parties need to take appropriate measures to ensure access to the physical environment, transportation, information and communication, including information and communication technologies and systems.
“Schools need to be supported, not only in developing an ethos of inclusion but also to have the appropriate means to implement this in practice and thus realize the policy objective of mainstreaming,” Daly et al (2007). The researchers propose that state departments needed to ensure that all necessary funding are promptly availed to school management authorities who wish to make modifications to school buildings, furniture, fittings or lighting, in order to accommodate pupils with disabilities. The findings of the study point to a potential role for a special state agency tasked with providing information on appropriate the design of schools that are physically accessible to PWDs, particularly when new buildings are being built and also where adaptations to premises, including extensions are being made.

Eklund (2008) critic the Kenyan Disability Act for only defining physical accessibility such in public buildings and public service vehicles, whereas accessibility includes tools and specialized services including the services of qualifies interpreters for the deaf and qualified teachers for the blind. The researcher views the Universal Design and barrier-free approaches, physical infrastructure and their parts work well and serve every user safely in different circumstances relevant to where it is being implemented. This is to mean that Kenyan reality is unique and works from a benchmarked model from Finland but has a lot of challenges in attempts to suit persons with any type of disability.

2.7 Information packaging and Dissemination and Disability Mainstreaming

Iwhiwhu (2008) defines packaging as the bundling of products and services to address specific needs and that it can be done by reformatting and synthesizing raw information, combining expertise or consulting on a subject with access to relevant information sources and providing training or assistance to a user in accessing an information product. Chisita (2011) in the study to document indigenous agricultural information in Zimbabwe argues that agricultural extension officers are critical in facilitating access to information on scientifically proven methods of improving agricultural yields.

Okore et al. (2009) state that developing countries are endowed with a lot of indigenous knowledge but access to such knowledge is hindered by lack of an environment that permits free flow of ideas amongst members of the community. The diverse nature of clients that extension service providers deal with on a daily basis can include people with disability who in some cases may have information with regards to local knowledge that can be used to build
on what the extension services providers posses. Therefore the information generated to educate a non-technical person on a subject of importance must be packaged and disseminated to give a complete, concise picture of the subject for ease of understanding and comprehension by everyone. In addition, Okore et al. (2009) further contend that parties entrusted to manage indigenous knowledge e.g. libraries, should not view themselves as owners of such knowledge but as custodians who are freely available to dialogue with members of the community, through creating social spaces for communities to learn from each other. For the interests of all agricultural extension clientele, dissemination of information is perceived by the researcher to commendably contribute to successful disability mainstreaming in the service industry.

“Information Communication Technology offers a sense of information access, independent of physical mobility that in turn enables participation in government decision making and independent access to information” (Stadler, 2006). It follows that having the right information helps to make the right choices in decision-making processes and, therefore, people who access useful information at the right are advantaged. The writer alludes to the fact that information must be packaged and disseminated in a manner that is not discriminatory to persons with disabilities for any meaningful change in society.

Waddington (2008), in the working paper on using European Commission Law to establish an internal market in disability accessible goods and services asserts that different groups of people with disabilities require information to be provided in alternative formats for effective communication with them to prevail. While mainstreaming disability in development; it is important that from the design or inception stage, the needs of disabled consumers of all public goods and services have to be considered and incorporated before disseminating information to them.

Information and communication form part of policies, spaces, and objects for technology design or the design of support products to incorporate values and meanings to all products and services. Oodally (2006), states that the driving force therefore, is to conceive and put in place communicative dimensions in suitable and accessible terms in relation to the specific needs women with disabilities or any other users have. It is therefore important to recognize the unique differences and skills of people with a disability as each person can respond to their disability differently and requirements of disability groups will vary.
2.8 Technology Development and Transfer and Disability Mainstreaming

Li-Hua (2006) in the study of effectiveness of technology transfer in China indicates that technology will not occur without knowledge transfer, since knowledge is the fundamental to control technology. The researcher acknowledges that appropriate technology has been practiced for many years and has evolved into a development approach that is aimed at tackling community development problems. Therefore by various definitions, it involves the transfer of ideas, information, methods, procedures, techniques, tools, or technology from the developers to potential users. (Vergragt, 2006) submits that appropriate technology has been advocated as a solution for rural development problems, but has also gained support as a direction for sustainable technologies. New agricultural technologies and ecological sensitivity are expected to provide plentiful and affordable food supplies to rural populations and further promote quality health while conserving the environment leading to a sustainable society.

As an approach to development, appropriate technology transfer not only emphasizes job creation and optimum use of existing skills and resources but also builds on the skills and resources to raise the productive capacity of a community (Vergragt, 2006). According to Akubue (2000), appropriate technology is not meant to be static or promote stagnation but to change as a country achieves progress in its level of development and eventually only environmental sustainability will hasten the eradication of abject poverty, unemployment and inequality. In the book “The Future of Disability in America”, Field and Jette (2007) explain the use of assistive and mainstream technologies for people with disabilities from a medical perspective. They contend that the development of such technologies is dependent on research as proposed by policy at national level, to become usable and accessible to people with different disabilities. The writers clearly present the need for appropriate technology development and transfer for effective disability mainstreaming. It therefore suggests that technology transfer will markedly affect the outcome of any disability mainstreaming programme.

All these studies agree that there is a relationship between poverty and disability. They tend to give a rough generic guide towards full implementation of disability mainstreaming. It is therefore of importance to ascertain how this is being done within the field of agricultural extension since appropriate technology is currently being widely used to solve technological
problems throughout the world, by providing sustainable food security solutions which are beneficial to the rural communities.

The researcher in this study views the use of technology as an important consideration in disability mainstreaming of extension services but only when economically viable. This is to be on a long-term basis for the community to benefit from distinct advantages like suitable employment opportunities, improved health and safety and training. In as much as all the benefits mentioned may not come immediately as one whole package, the disseminated technological solutions must be consistent with the culture(s) of the targeted beneficiaries as active participants, use local resources and skills for successful application.

People with disability are not always able to work in conventional fashion as the result of their disability, but they are quick to adapt when required. According to Hanko & Polman (2006) people with disability are recommended to work through their own solutions to the task required (with due respect to hazards, safety, etc.) If this is to succeed, then it follows that the technologies used for the production systems involved in the agro-industrial cycle should match the capabilities of the disabled workers involved where the use of mechanical aids, trolleys, access to electrical power, associated tools, etc. are preferred to manual work. Albu (2005) described the importance of linking education, technical ability and knowledge with the capability of the worker. When training farmers in Ethiopia, Hanko (2006) emphasized the importance of educational level, and how this took priority over disability as a constraint on the capability of the specific disabled person.

The underlying principle is one of addressing the abilities, needs and preferences of the people or person concerned and only where practical, technology is used to satisfy these needs. For example, physically disabled people working at the same interface as non-physically disabled persons may have difficulties when standing, seated, lifting, turning round etc, according to the extent of disability. It therefore calls for the technologies being promoted for use by people with disability should be those adapting to people, and not the other way around that will guarantee safety, accessibility, reliability and affordability. Consideration must be made to accommodate the variations in the stature of non-disabled people to ensure that most if not all are able to interface with the structures, equipment, vehicles and tools with which society is familiar.
2.9 Theoretical Framework
This research is based on the social model of disability which suggests that society has failed to make adequate allowance for people with disabilities to enter the mainstream of the society. Carson (2009) argues that it is not impairment that causes disability but the way in which society has disregarded to include people with disabilities in all spheres of development. This model of disability is further defined in the study as a particular form of social oppression that focuses on attitudinal, environmental and organizational barriers which prevent disabled people from having equality of opportunity in education, employment, housing, transport, leisure, etc. Through this ideology, people with disabilities are supposed to be given the opportunity to maximize their potentials by promoting their participation and productive involvement in the society.

2.10 Conceptual Framework
In this study the conceptual framework incorporated the dependent variable, four independent variables, and a moderating variable. The framework sought to establish the relationship of awareness, accessibility, information dissemination and technology transfer to disability mainstreaming as being affected by leadership interest and support. Taking into consideration that the independent variables and dependent variable in the conceptual framework are supposed to hold true, it is nevertheless dependent on the leadership interest and level of support given by the disability mainstreaming organization (ministry of agriculture) in this study. The conceptual framework adopted for this study is shown in figure 2.
**Figure 2: Conceptual Framework**

**Independent Variables**
- Awareness
  - Level of education
  - Interaction with PWD
  - Training attended
  - Knowledge of policy statement
- Accessibility
  - Office buildings
  - Toilet facility
- Information dissemination
  - Braille
  - Sign language
  - Audio
  - Audiovisual
  - Pamphlets
  - Brochures
- Technology transfer
  - Technologies Developed
  - Technologies Disseminated
  - Technologies adopted

**Moderating Variable**
- Leadership interest and family support

**Dependent Variable**
- Disability mainstreaming in Agricultural extension services
2.11 Summary of Literature review

This chapter has reviewed existing literature on factors influencing disability mainstreaming as presented by various researchers in relation to poverty and empowerment of people with disability. The literature presents the theoretical perspective of disability and its associated models, highlighting mainstreaming from a development perspective while justifying the rationale for including people with a disability for all development and poverty alleviation programmes. Based on this development perspective, the researcher in this study identified the key indicators to be used for each variable which account for personal opinions, organizational cultures and actual observable conditions.

In the analysis, it shows the relative importance of levels of awareness, accessibility, information dissemination and technology transfer (independent variables) to disability mainstreaming (dependent variable) as being affected by leadership interest and support (moderating variable). The theoretical and conceptual frameworks which outline the relationship between the dependent and independent variables identified for the study and their indicators are also provided. Awareness, and participation, comprehensive accessibility that ensures socially imposed disabling barriers are removed and the twin track approach that encourages mainstream inclusion working alongside disability specific initiatives are highlighted.

Some literature gaps were found missing on technology development and transfer. This was shown by the fact that most available literature on disability mainstreaming appeared to mostly cover the subject matter in relation to physical rehabilitation from a medical perspective and not socio-economic empowerment. Not so much was documented on inclusive development practice within the project cycle of disability mainstreaming projects and programmes. Furthermore the variations in experiences of people living with a disability from the case studies accessed by the researcher were not exhaustive in as much as disability inclusive development recognizes unique differences and skills of people with a disability.
CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction
In this chapter the methodology to be used in undertaking the research is outlined. The chapter details the research design, data collection methods, instruments and analysis that was used in the research and presents the operationalization of variables.

3.2 Research Design
The research design used in this study was descriptive survey that relied on both qualitative and quantitative data. According to Babbie (2010), descriptive research involves gathering data that describe events and then organizes, tabulates, depicts, and describes the data collection. The study preferred the use of descriptive survey because the researcher wished to bring out the status of disability mainstreaming within a point in time from the perspective of the lead extension service provider (Ministry of agriculture) who also regulates the agriculture sector. The researcher in this study adopted the interpretive/constructivism school of thought which holds that reality is socially constructed by people active in the research. In essence, the researcher and the research itself will be interlocked in an interactive process.

The researcher considered the design to effectively facilitate understanding of the subject matter since it contains variables that cannot be realistically controlled. It also allowed for the acquisition of more in-depth information, observations, and experiences as brought out by the participants. This research design has been used by Lang and Murangira (2009), Katsui (2008), Eide and Ingstand (2011) and Mohapatra (2012) to achieve commendable success in addressing various aspects of disability mainstreaming. It was therefore expected that the descriptions gathered of “what is” may further be used by the researcher as a comparison to “what should be”, to ascertain areas that need to be addressed for successful disability mainstreaming. In addition, this study involved data collection that was spread over a considerably large number of people over a large geographic area.
3.3 Target Population

This study was conducted on the 108 technical extension staff of the Ministry of Agriculture drawn from different administrative units in six of the eight districts of Machakos County. This largely formed the eligibility for participation in this study. The focus of this study was on the government officers because the ministry of agriculture is the officially recognized lead agency in extension service delivery and regulation in Kenya. In as much as the country has some private agricultural service extension organizations, their operations are generally skewed towards high agricultural potential regions and high value crops, of which Machakos County is generally not considered.

People with disability were not involved in this study because the main objective was to assess the status of disability mainstreaming from a service provision perspective as currently perceived and implemented by the lead agency and not beneficiaries. The extension service delivery staffs who were involved in this study represented the different cadres of extension that includes station managers, extension coordinators, subject matter specialists at the District and Divisional levels, and frontline extension officers.

3.4 Sample Size and Sampling Procedure

3.4.1 Sample Size

The sample size was 108 (out of 150) technical staff who were derived from six out of the eight districts of Machakos County and representing each cadre of the administrative system i.e. station managers, extension coordinators, subject matter specialists and frontline extension staff at all levels. This was derived from the table for determining sample size from a given population as postulated by Krejcie and Morgan (1970). According to Harrie (2010), a qualitative sample should represent the diversity of the phenomenon under study within the target population. In as much as it can be achieved by a large random sample, this cannot efficient to guarantee accurate reliable results. It was therefore only logical and more efficient to purposively select a diversity sample with the aim to cover all existing relevant varieties of the phenomenon depending on the type and degree of diversity that is judged relevant.
3.4.2 Sampling Procedure

Purposive sampling was used to pick the station managers or extension coordinators where the officer represents both dockets because they are the station heads who double up as managers at the district level. Stratified and simple random sampling was be used to select the main respondents who directly deal with extension service clients at the field. This was because they perform their duties within different strata of the county administrative structure and also act as key informants of the study by virtue of their hands on experiences in implementing the extension projects and programmes. All the eight station managers and three institutional heads were purposefully selected. Four district subject matter specialists, five divisional extension team members and eight frontline extension workers were randomly selected in six purposefully selected districts. The six districts were purposefully selected to represent the different agro ecological zones in the county.

<table>
<thead>
<tr>
<th>Description of Staff</th>
<th>Sample</th>
<th>Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Station managers/Coordinators</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>District Subject matter specialists</td>
<td>23</td>
<td>32</td>
</tr>
<tr>
<td>Divisional Subject matter specialists</td>
<td>31</td>
<td>43</td>
</tr>
<tr>
<td>Frontline Extension Officers/workers</td>
<td>46</td>
<td>64</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>108</td>
<td>150</td>
</tr>
</tbody>
</table>

3.5 Research Instruments

The study used the questionnaire, focus group discussion and facility quality analysis. A questionnaire is commonly used to obtain important information about the population. The structured questionnaires were delivered to the respondents by hand at their respective work stations during working hours and filled immediately. Each item in the questionnaire sought to address a specific objective or research questions of the study. Section A of the questionnaire collected background information of the respondent, their level of seniority in the system and years involved in extension service delivery. Section B focused on staff awareness to issues of disability, their involvement in mainstreaming process and policy position as given by their parent ministry. Section C sought information on physical
accessibility and the respondents perceived requisites to successful disability mainstreaming. Section D was expected to give information on how the extension staffs have disseminated information to people with disability in relation to formats, quality and actual documentations. The final section of the questionnaire sought information on how various technologies have been developed, disseminated and adopted for use by people with disability.

A focus group discussion was also used to collect information from the key informants as relating to personal attributes such as gender and job seniority. Information on the recent actions to account for what individual have done or are doing and may possibly do in the future was also collected. To account for their attitudes, the focus group discussion deliberately probed the respondents in order to get information that would suggest levels of agreement in a positive or negative direction on the subject matter. In general, the focus group guide addressed the issues of awareness, physical accessibility, information dissemination and technology development transfer, transfer and adoption respectively.

3.5.1. Pilot Testing

To ensure consistency of questions in the research instruments, a pilot testing was conducted by the researcher in two stations deliberately chosen. From the two selected stations, a sample of two managers and ten technical staff; five from the District and Division respectively was used. The selected participants were then asked to interpret each question in their own words and then required to give their thoughts, questions and ideas about the questionnaire. Simultaneously the researcher was observing the interviewer and interviewee relationship. Any inconsistencies in the questionnaire and interviews were rectified immediately during the questionnaire piloting exercise.

3.5.2. Validity of research instruments

According to Mugenda and Mugenda (1999) validity is the degree to which the empirical measure or several measures of concepts accurately measure the concepts. The validity of the research instruments was achieved through content validity. Expert opinion was also appropriately sort from two practitioners already handling disability mainstreaming issues from the Kenya National Council for Persons with Disabilities. In the study, triangulation was also used to improve the internal validity of the research using the various data sources. The survey started with open-ended questions and followed up with
increasingly narrow questions that directly called for elaboration and explanation. To restrict the respondents in the study from trying to give answers that they thought were being sort, the researcher did not emphasize the need for implementing disability mainstreaming as a conformity requirement by Kenya national policy.

3.5.3. Reliability of research instruments
For reliability of instruments of research to be achieved, a pilot study was adequately conducted in two field stations whose data did not form part of the final study analysis. This was to test the reliability of the questionnaires and focus group discussion guide. The inadequacies, inconsistencies and weaknesses in the instruments were immediately corrected before final use in the other targeted field stations. Alternate-form reliability was also used in this study. This was achieved by changing the wording of the response alternatives but without changing the meaning in the questionnaire or focus group discussion guide. In some instances the order of questions were deliberately changed as situations demanded. Individual bias was addressed by using the three trained research assistants to administer the questionnaires who also made helpful observations during the data collection stage of study.

3.6 Data Collection Procedure
The researcher first sought permission from the Machakos County Director of Agriculture to conduct the study and then was allowed to contact the station heads of each District on a convenient day and time to visit for the meeting with the staff under their supervision. The researcher in this study then involved three trained research assistants and also personally administered the questionnaires, conducted the focus group discussion and also made requisite observations. During the study period, the researcher and his assistants accordingly informed all the respondents the purpose of this research, the expected duration of their participation, and the procedures to be followed after data collection. The questionnaires were then be disseminated for filling by the staff and then focus group discussions conducted at the same stations by the researcher and the three assistants. Information that was captured included the personal attributes, behaviour and attitudes of the respondents with regard to disability mainstreaming. All disseminated questionnaires and data from the focus group discussions were then collected on the same day for each station sampled.
3.7. Data Analysis Methods

All the completed questionnaires and focus group discussion reports were edited for completeness and consistency. The data collected were both quantitative and qualitative in nature. Quantitative data was analyzed according to the research questions by the use of descriptive statistics. This involved coding of data, for responses to the closed-ended questions and analyzing the data using the Statistical Package for Social Sciences (SPSS) program to yield frequencies and percentages. SPSS program further assisted in organizing and summarizing the data by the use of tables.

The data generated from open-ended questions was then analyzed by comparing and combining the responses from focus group guide and the questionnaire. These largely formed the qualitative data and were organized, categorized and reported in emergent themes by use of tables accompanied by explanations and general statements about the relationships among the categories of data.

3.8. Ethical considerations

During this study ‘disability’ was viewed in social and economic terms as to only relating to inclusion barriers in the mainstream of society, rather than in individual deficit. Appropriate consent to participate in research was sort from all respondents and measures put in place to ensure confidentiality of their responses. Any benefits as an outcome of the research and its findings were to be passed on to the respondents in appreciation to their participation to generate further insight into the little available knowledge in the subject area. The researcher and assistants also strived to maintain high standard of professional behavior in line with national regulations and organizational policies that are practiced by the University of Nairobi and endeavored not to bring the academic profession into disrepute through any omission or commission.

3.9. Operational definition of variables

This study used qualitative indicators to measure the relation between the dependent and independent variables. The analysis of the relationship using the identified indicators was done as outlined in Table 3.2.
Table 3.2: Operationalizing Study Variables

<table>
<thead>
<tr>
<th>Objective</th>
<th>Variable</th>
<th>Indicator(s)</th>
<th>Measurement</th>
<th>Scale</th>
<th>Data Collection Method</th>
<th>Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>To establish the extent to which the level of awareness determines disability mainstreaming in agricultural extension services.</td>
<td><strong>Independent Variable</strong>&lt;br&gt;Awareness&lt;br&gt;• Level of education&lt;br&gt;• Interaction with PWD&lt;br&gt;• Training attended&lt;br&gt;• Knowledge of policy statement</td>
<td>• Knowledge of policy statement&lt;br&gt;• Interaction with PWD&lt;br&gt;• Sensitization trainings attended&lt;br&gt;• Any officer(s) assigned to handle PWD&lt;br&gt;• Funding for PWD in projects&lt;br&gt;• Inventory of PWD(farmers)&lt;br&gt;• Entitlements of PWD in service delivery charter</td>
<td>a) Yes&lt;br&gt;b) No</td>
<td>Nominal</td>
<td>Focused Group Discussion</td>
<td>Descriptive statistics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Where and how to get support for PWD</td>
<td>Statement and or explanation</td>
<td></td>
<td>Observation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Level of education</td>
<td>Below 5 years&lt;br&gt;6 – 10 years&lt;br&gt;11 – 15 years&lt;br&gt;16 – 20 years</td>
<td>Interval</td>
<td>Focused Group Discussion</td>
<td></td>
</tr>
<tr>
<td>To assess the extent to which the status of physical accessibility to support</td>
<td><strong>Independent Variable</strong>&lt;br&gt;Accessibility&lt;br&gt;• Office buildings&lt;br&gt;• Toilet facility&lt;br&gt;• Reading area/library</td>
<td>• Existing ramps&lt;br&gt;• Number of customized toilet facility for PWD&lt;br&gt;• Availability of adequate office space to ease free movement of</td>
<td>1. Strongly disagree&lt;br&gt;2. Disagree&lt;br&gt;3. Neutral&lt;br&gt;4. Agree&lt;br&gt;5. Strongly agree</td>
<td>Ordinal</td>
<td>Focused Group Discussion</td>
<td></td>
</tr>
</tbody>
</table>


infrastructure determines disability mainstreaming in agricultural extension services.

To determine the extent to which extension information packaging and dissemination to people with disability determines disability mainstreaming in agricultural extension services.

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Questionnaire</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility to general agricultural extension services and technical guidance training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accessibility to general agricultural extension services and technical guidance training</td>
<td><strong>Independent Variable</strong></td>
<td><strong>Observation</strong></td>
</tr>
<tr>
<td>Information packaging and dissemination</td>
<td><strong>Braille</strong></td>
<td><strong>Ordnal</strong></td>
</tr>
<tr>
<td><strong>Sign language</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Collaborators in extension service providing information to PWD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Existence of disability specific extension data collection and statistics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Use of augmentative forms of information in extension</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To assess the extent to which specific appropriate technologies developed and transferred for use by people</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Independent Variable</strong></td>
<td><strong>Technology development and transfer</strong></td>
<td><strong>Nominal</strong></td>
</tr>
<tr>
<td><strong>Technologies Developed</strong></td>
<td><strong>a) Yes</strong></td>
<td><strong>Focused Group Discussion</strong></td>
</tr>
<tr>
<td><strong>Technologies Disseminated</strong></td>
<td><strong>b) No</strong></td>
<td><strong>Questionnaire Observation</strong></td>
</tr>
<tr>
<td><strong>Technologies adopted</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Existing appropriate technologies developed for PWD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Existence of inventory on any researchable issues on disability mainstreaming</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
with disability
determines
disability
mainstreaming
in agricultural
extension
services

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Type</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Research workshops attended by PWD on technology development</td>
<td>Discrete figure</td>
<td>Ratio</td>
</tr>
<tr>
<td>Number of value-addition technologies for PWD</td>
<td></td>
<td>Ordinal</td>
</tr>
<tr>
<td>Number of PWD participating in on farm experiments that introduce new technologies</td>
<td></td>
<td>Nominal</td>
</tr>
<tr>
<td>Percentage of PWD in the stakeholders’ forum at all administrative levels</td>
<td></td>
<td>Ratio</td>
</tr>
<tr>
<td>Participation of PWD in the review and updating of the agricultural research master plan</td>
<td></td>
<td>Ordinal</td>
</tr>
</tbody>
</table>
CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.0 Introduction

In this chapter the data collected on integration of disability mainstreaming in agricultural extension services in the Ministry of Agriculture Machakos County in Kenya is presented, analyzed and interpreted. The analysis, presentation and interpretation of data is focused on the findings on the extent to which awareness, accessibility, information dissemination and technology transfer have contributed towards integration of disability in Agricultural extension services.

4.1 Questionnaires Return Rate

A total of 108 respondents comprising of 8 station managers of the District Extension units, 24 District extension officers, 38 Divisional extension officers and 38 frontline extension officers/workers were given questionnaires. The entire targeted sample responded promptly and gave responses that on evaluation were considered adequate for the study and therefore achieving a response rate of 100% as shown in Table 4.1. The success of the response rate was attributed to continuous follow up by the research team and eagerness from the respondents to participate in a study that would benefit their organization.

Table 4.1: Response Rate

<table>
<thead>
<tr>
<th>Category</th>
<th>Sample Size</th>
<th>Responses</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Station managers/Coordinators</td>
<td>8</td>
<td>8</td>
<td>100</td>
</tr>
<tr>
<td>District extension officers</td>
<td>24</td>
<td>24</td>
<td>100</td>
</tr>
<tr>
<td>Divisional extension officers</td>
<td>38</td>
<td>38</td>
<td>100</td>
</tr>
<tr>
<td>Frontline extension workers</td>
<td>38</td>
<td>38</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>108</strong></td>
<td><strong>108</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
4.2 Respondents Characteristics

This section of the study sought to establish the characteristics of the respondents in terms of their level of education and years of experience in agricultural extension work. The findings of the study are presented below.

**Distribution by level of education**

Respondents were asked to indicate their level of education and the results of the study are as presented on table 4.2

<table>
<thead>
<tr>
<th>Category</th>
<th>Certificate</th>
<th>Diploma</th>
<th>1st Degree</th>
<th>Masters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managers</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>DSMS</td>
<td>0</td>
<td>0</td>
<td>22</td>
<td>2</td>
</tr>
<tr>
<td>DIVSMS</td>
<td>0</td>
<td>27</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>FEO</td>
<td>26</td>
<td>12</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>26</strong></td>
<td><strong>39</strong></td>
<td><strong>40</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

The results show that most of the respondents (40) are first degree holders who constitute 37% of the total respondents. This is followed by Diploma holders (39) which constitute 36.1%. Certificate holders (26), translating to 24.1% and the least are masters degree holders (3) which represents 2.8%. In general terms, this indicates that the current composition of agricultural extension staff in Machakos county have adequate education to interpret policy statements for prompt implementation. Furthermore, the population is in a better position to answer questions and give a technical opinion on the subject of the study.

**Years of experience in agricultural extension**

The respondents were asked to state their years of service in Agricultural extension while directly rendering technical services to various agricultural projects and programmes. The results are shown in Table 4.3.
The study shows that majority of the respondents have working experience of between 3 and 31 years, with the total average being 20 years of service and representing 46.3% of the whole sample. Most staff sampled had worked for at least 29 years. The number years of worked shows that most extension staff who are service providers in the agricultural extension programmes have commendable experience in extension service provision which is necessary for the implementation of national policy on behalf of the Kenya government in Machakos County. Their experience levels were found useful for this study because they have adequate information about the nature of the problem being investigated as agricultural extension practitioners.

<table>
<thead>
<tr>
<th>Years worked</th>
<th>Staff</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>7</td>
<td>6.5</td>
<td>6.5</td>
</tr>
<tr>
<td>5</td>
<td>9</td>
<td>8.3</td>
<td>14.8</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
<td>3.7</td>
<td>18.5</td>
</tr>
<tr>
<td>7</td>
<td>8</td>
<td>7.4</td>
<td>25.9</td>
</tr>
<tr>
<td>15</td>
<td>11</td>
<td>10.2</td>
<td>36.1</td>
</tr>
<tr>
<td>16</td>
<td>1</td>
<td>0.9</td>
<td>37.0</td>
</tr>
<tr>
<td>17</td>
<td>6</td>
<td>5.6</td>
<td>42.6</td>
</tr>
<tr>
<td>18</td>
<td>1</td>
<td>0.9</td>
<td>43.5</td>
</tr>
<tr>
<td>20</td>
<td>3</td>
<td>2.8</td>
<td>46.3</td>
</tr>
<tr>
<td>21</td>
<td>1</td>
<td>0.9</td>
<td>47.2</td>
</tr>
<tr>
<td>25</td>
<td>2</td>
<td>1.9</td>
<td>49.1</td>
</tr>
<tr>
<td>26</td>
<td>2</td>
<td>1.9</td>
<td>50.9</td>
</tr>
<tr>
<td>28</td>
<td>17</td>
<td>15.7</td>
<td>66.7</td>
</tr>
<tr>
<td>29</td>
<td>21</td>
<td>19.4</td>
<td>86.1</td>
</tr>
<tr>
<td>30</td>
<td>14</td>
<td>13.0</td>
<td>99.1</td>
</tr>
<tr>
<td>31</td>
<td>1</td>
<td>0.9</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>108</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Table 4.3: Work Experience*
4.3 Awareness of disability mainstreaming

In this section the study sought to establish the extent to which the level of awareness determines disability mainstreaming in agricultural extension services. The findings of the study are presented below.

4.3.1 Understanding the meaning of the term ‘disability mainstreaming’

The respondents were asked to indicate whether or not they understood the meaning of the term ‘disability mainstreaming’. The outcome of the study is as shown in the table 4.4

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO</td>
<td>80</td>
<td>74.1</td>
</tr>
<tr>
<td>YES</td>
<td>28</td>
<td>25.9</td>
</tr>
<tr>
<td>Total</td>
<td>108</td>
<td>100.0</td>
</tr>
</tbody>
</table>

From the total population sampled (n=108), 74.1% of the respondents (80 staff) did not understand the meaning of the term “disability mainstreaming”. The 25.9% (28 staff) who understood the meaning of the term were mainly officers who had a first degree or masters in their areas of study together with two diploma holders and two certificate holders who had worked in the ministry for more than 17 years. Employees with a first degree and masters had worked in the ministry for at least five years within agricultural extension section of the ministry of agriculture. The 25.9% of the respondents who did not understand the meaning of disability mainstreaming were mainly those officers who had a certificate or diploma and had worked for between six and thirty years.

4.3.2 Knowledge of the National Policy on Disability Mainstreaming

Only 12% of the officers acknowledged that they knew about the existence of a national policy on disability mainstreaming but none of them could clearly state what it says. These officers were mainly the station heads and District subject matter specialists whose work stations are usually situated at the extension unit headquarters. However, none of the respondents knew the ministerial policy on disability mainstreaming and could only speculate that it does not exist. This is illustrated in table 4.5.
Table 4.5 – Knowledge of National Policy on Disability Mainstreaming

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO</td>
<td>95</td>
<td>88</td>
</tr>
<tr>
<td>YES</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>108</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The 88% of the extension staff who did not know the national policy were officers from the fields comprising of divisional subject matter specialists and frontline extension workers who are always at the first level of contact with the farmers on a day to day basis. In terms of policy implementation, the extension staff in the field are the ones relied upon by the Kenyan government. The frontline extension officers seem to lack in knowledge of the existing policy on disability mainstreaming, further confirming what Katsui (2009) found out in Japan, that the progress and stagnation of disability mainstreaming is affected by personal or individual factors.

The senior civil servants in charge of the stations (District) had more initiative to know what the policy states while the same had not adequately been cascaded down to the frontline extension workers at the Division and Location level. In this study it was observed by the researcher that disability mainstreaming only appeared to the extension staff in the field after coming face to face with questions about it from outside their organization. The personal drive to seek more information, especially on emerging policy issues were found to be generally lacking in (88%) of the extension workers. The survey shows that those with a comparatively lower education (certificate and diploma versus degree and masters level) had least information on disability mainstreaming as a requirement in national or even ministerial policy.

4.3.3 Sensitization on Disability Mainstreaming

Only 2.8% of the officers sampled had been trained or sensitized on disability mainstreaming and these were the officers in charge of the stations at District and Divisional levels. “I attended a workshop on disability through a water project funded by the World Bank two years ago”, said one of the Extension Coordinators in Kangundo. It was also observed that there were no office inventories on people with disability despite the extension staff
acknowledging that they knew where some farmers with disability resided in their district. “A list of those who are disabled is usually written by the chiefs during relief food distribution, not us (Ministry of Agriculture),” one of the District subject matter specialists commented during the focused group discussions. In terms of contact and interaction, only 9.3% admitted to have met with disabled groups of farmers during the course of extension service provision to agricultural development projects. “A group of disabled famers have been asking us where to get funds for agriculture production but this was so tricky” said an FEO during the focus group discussion in Athi River District.

4.4 Accessibility to supportive and physical infrastructure

In this section the study sought to assess the extent to which the status of physical accessibility to support infrastructure determines disability mainstreaming in agricultural extension services.

4.4.1 Entitlements of PWD in Service Delivery Charter

The respondents were asked to rank their level of agreement with the status of entitlements of the people with disability in their office agricultural extension service Delivery Charters. The results are as shown in table 4.6.

**Table 4.6: Entitlement in Service Delivery Charter**

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>65</td>
<td>60.2</td>
</tr>
<tr>
<td>Disagree</td>
<td>37</td>
<td>34.3</td>
</tr>
<tr>
<td>Neutral</td>
<td>5</td>
<td>4.6</td>
</tr>
<tr>
<td>Agree</td>
<td>1</td>
<td>0.9</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>108</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

During the surveys it was observed that all the service charters in all the offices in the District and Divisional level did not have any clearly spelt out entitlement provisions for persons with disability. This was further confirmed by 60.2 % of the staff who strongly disagreed that people with disability have clear entitlements in the various service delivery charters prepared.
by the ministry in the extension units. Another 34.3% of the staff disagreed on the same. One of the Divisional station coordinators said that “even our total quality management manual does not have any procedure of serving a client with disability, so that is still neither here nor there”. Only 0.9% felt there was adequate provision for such entitlements in the service charter as provided by their office. However, 4.6% were none committal on whether it exists or not. “I don’t even know what the charter says about these people (PWD)”, said one of the responded in this group.

4.4.2 Provision of Ramps in the Office design

In order to see how easy people with disability could physically access the office buildings, the respondents were asked to rank their level of agreement with the current status of their office buildings in relation to ramps. The results were as presented in Table 4.7.

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>105</td>
<td>97.2</td>
</tr>
<tr>
<td>Disagree</td>
<td>2</td>
<td>1.9</td>
</tr>
<tr>
<td>Neutral</td>
<td>1</td>
<td>0.9</td>
</tr>
<tr>
<td>Agree</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>108</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 4.7: Provision of Ramps and customized toilets in Buildings

Of all the offices visited only one had a ramp for use by people with disability. 97.2% of the staff also strongly disagreed that their offices design had provision for ramps and also supported by another 1.9% of their colleagues who also disagreed on the same. In one of the stations the manager said that the building was an old one of the colonial times, and that no white man working there was disabled then. Another frontline extension worker said that “you know, this disability thing is a new thing to us; it has really found us unprepared”.

In all the stations only one new office that was still under construction had a customized toilet facility for use by people with disability. The rest were either pit latrines or none customized for use by PWD.
4.4.3 Equal accessibility to technical guidance

During the study the respondents were asked to rank their opinions on whether or not PWD had been equally accessing technical agricultural extension guidance like able bodied people in their areas of work. Table 4.8 shows the results on the status of accessibility to technical guidance by PWD.

*Table 4.8: Accessibility to technical guidance*

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>3</td>
<td>2.8</td>
</tr>
<tr>
<td>Disagree</td>
<td>99</td>
<td>91.7</td>
</tr>
<tr>
<td>Neutral</td>
<td>3</td>
<td>2.8</td>
</tr>
<tr>
<td>Agree</td>
<td>3</td>
<td>2.8</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>108</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

It was found out that 91.7% respondents felt that people with disability did not have equal access to technical guidance like all other able bodied people. Only 2.8% of the staff either agreed or were not sure about the situation.

4.5 Information Packaging and Dissemination

In this section the study sought to determine the extent to which extension information packaging and dissemination to people with disability determines disability mainstreaming in agricultural extension services.

4.5.1 Information packaging and dissemination in Braille

The respondents were asked to rank their opinions on whether or not they package and disseminate information to people with disability in form of Braille presentations. Table 4.9 shows the results
Table 4.9: Information packaging and dissemination in Braille

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>98</td>
<td>90.7</td>
</tr>
<tr>
<td>Disagree</td>
<td>10</td>
<td>9.3</td>
</tr>
<tr>
<td>Neutral</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Agree</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>108</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Majority (90.7%) of the extension officers strongly disagreed that information dissemination in their stations is also provided in Braille and the rest (9.3%) also disagreed. Therefore all the respondents confirmed that there is no provision for disseminating information to their clients in Braille. The Agriculture extension staff unanimously agreed that producing reports in Braille “was not a requirement even at the national level due to lack of capacity to do so”. Others even asked, “How can you produce what you cannot even read yourself?” All the respondents acknowledged that to achieve the production of reports in Braille form would take quite a long period of time and requires adequate training. They suggested that it is one of the areas that the ministry of agriculture as a whole had not invested in, even through collaboration with those who have the expertise.

4.5.2 Sign language Interpretation as a requirement

All the extension workers who participated in the study at all levels (District, Division and Location) disagreed that sign language interpretation is a requirement during provision of extension services as shown by 80.6% strongly disagreeing and 19.4% also disagreeing. They argued that sign language is a specialist skill that they did not have at that moment in time.

4.5.3 Information dissemination (Audio Visual)

From the table 4.10, 99.1% of the extension workers disagreed that they disseminate information to their clients various forms that includes audio visual presentations. The respondents also indicated that none of them packaged and presented any agricultural projects.
or extension information in pamphlets and brochures for specific use by people with disability in the extension units (Districts, Divisions and Locations).

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>101</td>
<td>93.5</td>
</tr>
<tr>
<td>Disagree</td>
<td>6</td>
<td>5.6</td>
</tr>
<tr>
<td>Neutral</td>
<td>1</td>
<td>0.9</td>
</tr>
<tr>
<td>Agree</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>108</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

### 4.5.4 Information provision to PWD by Collaborators

The respondents in the study were asked to rank their level of agreement with the status of their collaborators in agricultural extension service providing information to people with disability on where to get assistance. The results are as shown in Table 4.11.

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>74</td>
<td>68.5</td>
</tr>
<tr>
<td>Disagree</td>
<td>29</td>
<td>26.9</td>
</tr>
<tr>
<td>Neutral</td>
<td>3</td>
<td>2.8</td>
</tr>
<tr>
<td>Agree</td>
<td>2</td>
<td>1.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>108</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Cumulatively about 95.4% of the agriculture extension staff disagreed that their collaborators in extension service provision usually provide information about extension services accessible to people with disabilities. Only 1.9% of the extension workers agreed while 2.8% of them were neutral on the issue. The respondents of a neutral opinion said that was very difficult for them to tell whether or not, the collaborators give this information because they do not regularly report to the ministry of agriculture on their activities.
4.6 Technology Development and Transfer

In this section the study sought to assess the extent to which specific appropriate technologies developed and transferred for use by people with disability determines disability mainstreaming in agricultural extension services. The results were as follows,

4.6.1 Appropriate technologies developed

The Agriculture extension service providers to development projects and programmes were asked to give the number of appropriate technologies they had specifically developed for use by people with disability. The table 4.12 shows the results,

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO</td>
<td>104</td>
<td>96.3</td>
</tr>
<tr>
<td>YES</td>
<td>4</td>
<td>3.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>108</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

About 96.3% of the extension staff indicated that there were no appropriate technologies developed by their office specifically for use by people with disability while 3.7% of them affirmed the existence of such technologies e.g. multi storey kitchen gardens. There were no records in all the stations that indicated any researchable topics identified or discussed for review under disability mainstreaming. The extension officers also reported that no value-addition technologies for agricultural products had been identified and documented for use by persons with disability in their stations (Districts or Divisions).

4.6.2 Appropriate Technologies Disseminated

It was also observed that no extension staff had attended research dissemination workshops that included people with disability. The people with disability in the extension units (Districts or Divisions) had not participated in the review and update of the respective agricultural research master plans.
4.6.3 Appropriate Technologies Adopted

96.3% of the extension staff indicated that there were no people with disability participating in on-farm experiments that introduce new farming techniques in the agriculture projects or programmes. Only 3.7% of the respondents affirmed that people with disability have participated in such fora in their area of extension work. However, there were no records that new technologies had been adopted by the people with disability in all the Districts sampled.
CHAPTER FIVE: SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction
In this chapter the findings of the study are summarized, with the final conclusion and recommendations being made on the integration of disability mainstreaming in agricultural extension services in the Ministry of Agriculture Machakos County in Kenya.

5.2 Summary of Findings
In this section the summary of findings are presented according to the themes constituting the independent variables of the study.

5.2.1 Awareness and disability mainstreaming in agricultural extension services
Despite adequate awareness creation at the national level on policy issues, very limited and inadequate information was cascaded to the lower levels of the ministry to facilitate faster disability mainstreaming of extension services within the Agriculture development programmes and projects in Machakos County as rolled out by the national office. Most agricultural extension staffs in the County did not understand the term “disability mainstreaming” and usually found it quite challenging to implement disability mainstreaming policies given that they could not also understand its foundation. There were varying levels of comfort with discussing disability related issues with clients by the ministry of agriculture staff and this was further compounded by lack of adequate sensitization and training on disability mainstreaming from the part of the project/programme coordinators. Therefore one of the greatest challenges facing integration of disability mainstreaming in agricultural extension services was low awareness and education on disability mainstreaming issues which finally resulted in low attitudinal change among the staff.

5.2.2 Status of physical accessibility to support infrastructure
The structural make up of all old office buildings made it impossible for ramps to be constructed to assist ease of access by people with disability seeking extension services from Machakos County agriculture offices. Although the national policy on disability mainstreaming advocates for equal opportunity to government rendered services, none of the service delivery charters in all the agriculture extension offices at all levels of Machakos County had any clearly spelt out entitlement provisions for persons with disability. In the
ranking of their opinions most extension staff confirmed that people with disability did not have equal access to technical guidance like all other able bodied people in the county. It was relatively easier to identify people physical disability than it was to identify the other types of disabilities and as such many programmes towards mainstreaming disability focus more on physical disability only and not the other types of disabilities. Even with such knowledge, offices of the ministry of agriculture in Machakos County in their current states cannot adequately provide for essential services to suit the physical needs of people with disability.

5.2.3 Extension information packaging and dissemination
The study established that there was no provision for disseminating information to their clients in Braille by extension service workers servicing agricultural programmes in Machakos County. None of them had the knowledge or expertise to produce reports in Braille format for use by people with visual disability or has sought the same services from professionals. The extension services provided by staff in Machakos County largely employs the use of text based learning materials as the primary modality of teaching thus inhibiting personalized learning and the provision of alternate formats when required by people with disability. The agricultural extension leadership was not collaborating with other state departments with adequate capacity to provide different media and interaction modes of learning that is suitable for persons with disabilities.

5.2.4 Appropriate technologies development and transfer
The study established that the development of appropriate technologies by extension staff was inadequate in Machakos County and that people with disability may not immediately benefit despite their unique varied needs. There were no researchable topics identified or discussed for review under disability mainstreaming by the extension staff servicing agricultural programmes in the county. Identification and documentation of value-addition technologies for agricultural products for use by persons with disability in all the stations were lacking, leading to considerably static promotion and dissemination of the same. No people with disability were participating in on farm experiments that introduce new farming techniques in the agriculture projects or programmes as even fewer participated in stakeholder fora meetings to discuss agricultural development issues.
5.3 Discussion

This section presents the discussion of the research findings and is subsequently presented according to the themes constituting the independent variables.

5.3.1 Awareness and disability mainstreaming in Extension Services

The study shows that the current composition of agricultural extension staff in Machakos County have adequate education to interpret policy statements for prompt implementation. However, the extension workers at the Divisional and Location levels seem not to be actively involved in the interpretation but implementation part, only after their seniors in the organizational structure make the initiative. It follows that despite adequate awareness creation at the national level on policy issues, very limited and inadequate information is cascaded to the lower levels of the ministry to facilitate faster disability mainstreaming of extension services within the Agriculture development programmes and projects as rolled out by the national office. This is illustrated by the fact that 74.1% of the respondents (80 staff) sampled admit that they do not understand the meaning of the term “disability mainstreaming”. This further suggests that it would be quite challenging to implement disability mainstreaming policies by the staff given that a majority of them do not understand its basis or foundation. These findings affirm the ideas of Lang and Murangira (2009) who found that majority civil servants working within development line ministries have very little appreciation and understanding of disability mainstreaming issues. The lack of adequate awareness is a considerable drawback to disability mainstreaming in Agricultural development programmes aimed to empower all citizens, able or disabled.

The study also showed the extension staff who did not know the national policy on disability mainstreaming were officers from the field, comprising of divisional subject matter specialists and frontline extension workers. These categories of extension staff are always at the first level of contact with the farmers on a day to day basis and provide extension services to projects and programmes and are often relied upon by the Kenyan government to implement policy. The frontline extension officers seem to lack in knowledge of the existing policy on disability mainstreaming, further confirming what Katsui (2008) found out in Japan, that the progress and stagnation of disability mainstreaming is affected by personal or individual factors. The senior civil servants in charge of the stations (District) were found to have more
initiative in knowing what the policy on disability mainstreaming states while the same could not be established at the Division and Location level. 

The researcher in this study further observed that disability mainstreaming only appeared to the extension staff in the field after coming face to face with questions about it from outside their organization. The personal drive to seek more information, especially on emerging policy issues were found to be generally lacking in (88%) of the extension workers. The survey shows that those with a comparatively lower education (certificate and diploma versus degree and masters level) had least information on “disability mainstreaming as a requirement” in national or even ministerial policy on Agricultural development programme/projects implementation countrywide. It confirms observations by Nyagudi (2012), who found that among the challenges facing disability mainstreaming is low awareness and education on disability which results in low attitudinal change. Therefore sensitization within an organization needs to be wholesome and given a clear, practical and resourced follow-up action as proposed by Jones and Webster (2006) to not only improve the lives of disabled people but ease planning for development programmes to mainstream disability specific actions that can foster commitment and involvement of staff in mainstreaming. Due to lack of internal awareness and knowledge of disability issues in the lower level administrations (Divisions and Locations) unlike the higher District level, there is an urgent need for human resource development and management to rapidly change the current state of affairs within the organizational hierarchy of Agricultural extension in Machakos County. 

It was also observed that there were no office inventories on people with disability despite the extension staff acknowledging that they knew where some farmers with disability resided in their district. It shows that most respondents thought information on the disabled was only important at times of emergencies and relief food provision. From an administrative point of view, there is lack of proactive registration of all people with disability for all relief, recovery and preparedness activities by the lead Agricultural extension service provision and regulation agency in Machakos County. In as much as most offices had service delivery charters, there was no clear illustration on them as to how people with disability would be expressly catered for, within the current demand driven agricultural extension service provision approach.
Raising awareness on disability mainstreaming issues can firmly facilitate extension practitioners within development projects or programmes to acquire and disseminate appropriate training and technical support to the whole population and also practice greater accountability for using resources effectively as postulated by Umalsova et al (2009). In the case of the extension staff of the ministry of Agriculture in Machakos County, it would be difficult to immediately execute the disability mainstreaming component of any agricultural development project or programme given the low appreciation of mainstreaming from the largest population of the policy implementers on the ground. As to whether awareness affects disability mainstreaming in Agricultural extension services, the study established that personal perspectives on interactions with the disabled creates a considerable variability in exposure to disability awareness issues from the general opinions of majority of the respondents. There was also an illustration of varying levels of comfort with discussing disability related issues with clients by the ministry of agriculture staff, an issue supported by the findings of Kline (2012) and further shown by lack of adequate sensitization and training on disability mainstreaming.

5.3.2 Physical Accessibility and Disability Mainstreaming
Observations made by the researcher during the study showed that none of the service provision charters in all the offices at all levels did not have any clearly spelt out entitlement provisions for persons with disability as further confirmed by a cumulative 94.3% of the staff. However, 4.6% (mainly station managers at District level) were none committal on whether it exists or not. This shows that some senior government officers had some fear in commenting on the level of disability mainstreaming in their work place and preferred to only give a general impression of compliance. Of all the offices visited only one had a ramp for use by people with disability with only one new office that was still under construction having a customized toilet facility for use by people with disability. The situation with the office buildings shows that there was lack of preparedness to meet the needs of people with disability. It is also suggestive that the extension service providers overlook the probability of having to host a physically disabled client in their office premises. Furthermore, the structural make up of some old buildings makes it impossible for ramps to be constructed and any other customization to meet the needs of people with disability is also compounded by lack of adequate space for expansion.
The Ministry of Housing in Kenya has drafted various legislations that are currently in the approval process, for providing access by PWDs through specifics e.g. buildings designed to accommodate PWDs, convenient entry into buildings, provision of parking facilities, ramps etc. In as much as this is expected to work directly to the ease accessibility of PWDs to buildings and housing, very little is being done to correct the current situation by state departments. For example, the researcher observed that only two office buildings belonging to the Ministry of Agriculture in Machakos County have embraced the concept of a universal design which takes into consideration an inclusive approach to designing buildings.

Therefore the key stakeholders identified to ensure the compliance to such standards that include the government, developers, consultants and contractors appear not to be working well in partnership for the realization of total disability mainstreaming in physical infrastructure. The hardest part is that property developers who are usually contracted to build government offices appear to be the foremost culprits of non-compliance, as shown by obvious design challenges facing the latest office being built in Kangundo District.

In the ranking of their opinions most extension staff (91.7%) confirmed that people with disability did not have equal access to technical guidance like all other able bodied people. The United Nations High Commission for Human Rights in 2009 in the study on enhancing awareness and understanding of the Convention on the Rights of Persons with Disabilities recognizes accessibility in terms of accessible environment to be instrumental in the realization of the rights of persons with disabilities to independent living and full participation in all areas of life. The absence of such support structures in modern times and at a time when national policy implementation is being audited shows very slow progress in realizing full disability mainstreaming. As a government department, the offices of the ministry of agriculture in Machakos County cannot, in their current states adequately provide for essential services to suit the physical needs of people with disability.

5.3.3 Information packaging and Dissemination towards Disability Mainstreaming

The respondents in the study ranked their opinions on whether or not they package and disseminate information to people with disability in form of Braille presentations. All the respondents confirmed that there is no provision for disseminating information to their clients in Braille. It emerged that none of them had the knowledge or expertise to produce reports in Braille format for use by people with visual disability. There was no illustration of any efforts
to do so by the ministry of agriculture. As currently operational within the extension services provided by staff in Machakos County, the restrictive practice of using text based learning materials as the primary modality of teaching inhibits personalized learning and the provision of alternate formats when required by people with disability. The study established that the current practice of using text-based materials by extension workers indicates their total inability to provide suitable versions of text for clients who are unable to perceive or use the content. Some investment is therefore required in this area especially through collaboration with other state departments with adequate capacity, like the government press and the national library services.

The definition of information packaging by Iwhiwhu (2008), expressly intends to address specific needs of the users. Extension workers servicing Agricultural programmes need to learn about different media and interaction modes on the learning of persons with disabilities, for example how to use augmentative and alternative modes of media for a more effective and enduring assimilation of certain content.

All the extension workers felt that sign language interpretation was not a requirement during provision of extension services. Their argument that sign language is a specialist skill that they did not have at that moment in time is well grounded in logic. In as much as the extension staff in Machakos County had documented agricultural information, there was no evidence to show that people with disability had received or even used the information. This confirms that the argument advanced by Chisita (2011) that agricultural extension officers are critical in facilitating access to information on proven methods of improving agricultural yields. However, possession of information is not enough, but actual dissemination to the intended beneficiaries at the most adequate time is of greatest importance.

The recognition by Oodally (2006) that the unique differences and skills of people with a disability determine the kind of response to their disability also requires that systems are put in place to meet these specific information needs. The case of Machakos County agricultural extension staff not packaging and disseminating information to their clients in the required forms negates the purpose for which information and communication is envisioned; to form part of meaningful products and services to all people despite their varied abilities.
5.3.4 Technology Development and Transfer

The Convention on the rights for People with disability (2008) expressly provided for consideration, accessible information to persons with disabilities about mobility aids, devices and assistive technologies, including new technologies, as well as other forms of assistance, support services and facilities. This was intended to promote the training of professionals and staff working with persons with disabilities so as to better provide the assistance and services guaranteed by those rights. However, the development of appropriate technologies by extension staff was found to be inadequate in Machakos County as confirmed by the 96.3% of the respondents. The findings in Machakos County indicate that people with disability may not immediately benefit from specific appropriate technologies, since none of these had already been developed specifically targeting them.

The current situation therefore does not support conditions that facilitate sustainable technologies as suggested by Vergragt (2006). The opportunity to incorporate appropriate technology and solutions in Agricultural programmes by the extension staff may be missed in order to solve rural development problems. This potentially has the effect of denying people with disability opportunity to create jobs and quality health while conserving the environment leading to unsustainable society. It will also undermine efforts to use the variety of existing skills and resources possessed by people with disability that would have otherwise been channeled towards raising their productive capacity as proposed by Vergragt, (2006).

The study also established that there were no researchable topics identified or discussed for review under disability mainstreaming by the extension staff servicing agricultural programmes in the county. The absence of identified and documented value-addition technologies for agricultural products for use by persons with disability in all the stations gives reason for worry. This therefore means that in Machakos County, appropriate technology development is considerably static and the promotion of the same is also stagnating. The achievement of progress in development and eventual environmental sustainability to hasten the eradication of abject poverty, unemployment and inequality as proposed by Akubue (2000) is not guaranteed.
Findings of this study also show that appropriate technologies dissemination is considerably slow and inadequate as confirmed by the situation where no extension staff had attended research dissemination workshops that included people with disability. Furthermore, it was confirmed that the people with disability in the extension units (Districts or Divisions) had not participated in the review and update of the respective agricultural research master plans. This illustrates that the interests of people with disability may not fully be incorporated in the long run. Under the circumstances that no people with disability were participating in on farm experiments that introduce new farming techniques in the agriculture projects or programmes, a lot is missed out by them. To undertake or promote research and development of universally designed goods, services, equipment and facilities, should require the minimum possible adaptation and the least cost to meet the specific needs of a person with disabilities.

The study established that the promotion and use of appropriate technologies resulting from research is fundamental to providing universal access as agreeable by most agricultural extension service workers in Machakos County. However, extension services they continue to offer cannot adequately demonstrate realistic adoption and use of standards and guidelines for disability mainstreaming as provided for in the Convention on the rights of persons with disability (2008). The minimal participation of people with disability in the agricultural stakeholder fora meetings (less than 10%) further shows lack of adequate inclusion. There being no record of these people adopting new technologies further complicates their already difficult situation. In as much as the Convention on rights of the rights of persons with disability, recognizes the valued existing and potential contributions made by persons with disabilities to the overall well-being and diversity of their communities, this appears not to be the case in Machakos County. Therefore the low participation by persons with disabilities will result in their reduced sense of belonging and in effect significantly reduce their chances of advances in the human, social and economic development of society and the eradication of poverty.
5.4 Conclusions

The study established that the agricultural staff providing extension services to projects and programmes in Machakos County have not adequately integrated disability mainstreaming in their work as required by the Kenya government since 2009 and proposed by the Convention on the rights of persons with disability (2008).

5.4.1 Level of Awareness

The agricultural staff level of awareness on the requirement to integrate disability mainstreaming in extension services as stipulated in policy was found to be very low. This therefore ensured that they also unsatisfactorily sensitized their colleagues on the same at the lower levels of agricultural extension units, largely due to limited and inadequate information from the District programmes and projects coordinators. This was further illustrated by the fact that no disability mainstreaming policies required to mainstream disability in extension programmes were clearly recognized by the staff as being implemented by the Ministry of Agriculture staff in Machakos County as at the time of this study. Furthermore, no baseline surveys on disability mainstreaming had been carried out that recommend the training needs for the agriculture extension staff servicing agricultural projects and programmes to enable them render effective service to persons with disabilities. Therefore, low level of awareness amongst staff (74.1%) with a cumulative agricultural extension work experience of over 17 years, greatly accounted for the very low integration of disability mainstreaming in the services offered in Machakos County.

5.4.2 Physical Accessibility

In terms of physical accessibility to support infrastructure, the current status in the County administrative and service buildings do not support the accessibility needs of that persons with disability. Therefore this can discourage such people from seeking services offered by agricultural extension staff within the office setup. Non compliance levels of up to 94% with the physical accessibility requirements of the guidelines given by the Convention on the Rights of People with Disability (2008), shows that to a great extent the integration of disability mainstreaming is not guaranteed in the current state.
5.4.3 Information Dissemination

The agricultural information packaging and dissemination to people with disability was found to be inadequate as compared to the proposed guidelines in the ministerial strategy to address disability issues in extension service provision. The overall outcome was that the integration of disability mainstreaming in agricultural extension services at all levels of the county could not be regarded as meeting the set standards by the Convention on the rights of persons with disability (2008). Therefore the overall situation depicts that information packaging and dissemination largely determines the extent to which disability mainstreaming can be integrated in government provided services.

5.4.4 Appropriate Technology Transfer

The study established that the agricultural extension staff had not developed any appropriate technologies and subsequently not transferred any for use by people with disability in Machakos County. It therefore follows that substantial integration of disability mainstreaming in agricultural extension services cannot be achieved in Machakos County under the current situation. Therefore the integration of disability mainstreaming in agricultural extension service sector will commendably be dependent on the technologies developed and taken up for adoption by PWDs.

Finally, if adequate awareness is created on disability mainstreaming, physical environment improved; information is appropriately packaged and disseminated in order to transfer suitable technologies for use by people with disabilities. In as much as disability mainstreaming is a globally accepted strategy for promoting equality and equity, the full implementation of existing policy on the same at all levels and at all stages by all stakeholders is an urgent need to empower people with disability to develop all citizens. This will require prudent planning, resource allocation, implementation and monitoring of programs and projects to ensure disability mainstreaming is totally integrated in all government services.
5.5 Recommendations

In line with the findings of the study, the researcher recommends that the ministry of agriculture in Machakos County should look at different ways of ensuring that awareness, physical access, information dissemination and technology transfer are improved to ensure commendable integration of disability mainstreaming in agricultural extension services.

1. To improve on policy awareness, knowledge and skills among its technical staff, the leadership of agricultural development projects/programmes need to provide trainings on disability awareness, organization disability policy, and the inclusion of persons with disabilities in organization programs. Local disabled people’s organizations can be invited to facilitate during such trainings in order to provide consultation and share information on disability adjustments and on accessibility standards. In terms of making agricultural programs and activities inclusive, the adoption of a written organization policy, Disability Action Plan with goals and strategies to achieve inclusive development within and by the organization on inclusion of persons with disabilities can be adopted. A well trained staff member can be appointed as a Disability Focal Point Person to promote, facilitate and monitor the implementation of the Action Plan within the organization. This person will in turn incorporate inclusion of people with disabilities into program monitoring and evaluation, and also target women and girls with disabilities as a strategy for achieving gender equity and disability inclusive development.

2. To ensure physical accessibility to persons with disabilities, the County governments must disapprove all agricultural support infrastructure plans that do not take into account access needs for people with disabilities. The national government on its part should also ensure all other buildings housing government offices are responsive to the needs of persons with disabilities and alternatives must be provided relating to buildings whose current structural make up cannot immediately accommodate major adjustments. To adequately achieve the making of these offices and facilities accessible, the ministry of agriculture needs to consider using disability technical experts to review the accessibility of their extension coordination office buildings and facilities and so as to recommend on how to increase accessibility through a thorough disability audit.
3. In order to make agricultural extension information disseminated more useful to all clients, all organization-sponsored meetings, trainings and conferences need to be held in accessible venues and with materials provided in alternative formats including Braille, large print and/or electronically, with professional sign language interpreters being involved as needed. Further to that, the ministry of agriculture must ensure that their communication is accessible at all times and that information on their website is periodically reviewed to ensure it meets accessibility standards. It will also be the role of the agricultural extension staff to publicize that the information they provide is indeed useful and meets requisite access standards to all clients, including people with disability.

4. There is great potential for the development of simple and cheap technologies that would assist in integrating people with disability into mainstream agriculture. This can be achieved by making visible the organization commitment to inclusive development through documentation and sharing of success stories of including persons with disabilities in agriculture through materials, presentations, reporting and networking. In addition, the inclusion of disability disaggregated programmes data in reporting, presentations, and success stories can help in presenting the need for partnerships with other stakeholders to design new and improve on any other existing applicable agricultural technologies to be disseminated through development projects and programmes for people with disabilities.

5. Finally, the ministry of agriculture in Machakos County may need to review existing agricultural projects and programmes to accommodate the needs of people with disabilities and where appropriate, additional resources can be mobilized to fund for disability-related adjustments that will subsequently enable the organization to better practice inclusive development. To achieve this, the agricultural extension staffs working in projects and programmes will therefore need to identify possible barriers to participation of persons with disabilities in terms of organizational policies, technical support and financial requirements that could limit accessibility (physical access, information and opportunities) in order to guarantee integration of disability mainstreaming in the extension services offered in Machakos County.
5.6 Suggestions for Further Research

The results of the study indicated that the agricultural staff providing extension services to projects and programmes in Machakos County have not adequately integrated disability mainstreaming in their work.

The study therefore recommends that further research be carried out to assess the determinants of integration of disability mainstreaming in extension services, using the people with disability alone while applying the human rights based model.

In this study it was established that not so much information was available on technology development and transfer in relation to the integration of disability mainstreaming in Agriculture. The study therefore recommends that further research be carried out to determine other factors affecting research on appropriate technologies for integrating people with disabilities into mainstream society.
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APPENDICES

Appendix I: Questionnaire to Study Respondents

This survey instrument was developed to capture data on factors determining integration of Disability mainstreaming in Agricultural Extension Services in the Ministry of Agriculture in Machakos County, Kenya. The data obtained from this exercise will be used solely for a dissertation for fulfillment of the requirements For the Award of the Degree of Master Of Arts in Project Planning and Management of the University of Nairobi. Your institution has been identified as a key respondent in the extension service provision and regulation in Kenya. In this regard, you are kindly requested to participate in this survey by providing answers to enable the researcher fulfill the research objective. Appropriate measures are in place to ensure confidentiality of your responses in this questionnaire.

**SECTION A: GENERAL INFORMATION**

Name of District:  

Designation of respondent  

Current Deployment of respondent  

Gender  

Male ( )  Female ( )

Level of education achieved?  
Diploma ( )  Degree ( )  Masters ( )  Others (please specify)  

Years you have been working in extension department of the ministry?  

Below 5 years ( )  6 – 10 years ( )  11 – 15 years ( )  16 – 20 years ( )
SECTION B:
AWARENESS

Please tick the most appropriate option using the guide provided

1. Do you understand the meaning of the term ‘disability mainstreaming’? Yes ( ) No ( )

2. In the course of your work, have you interacted with any client with disability? Yes ( ) No ( )

3. Are there extension staffs with any form of disability in your station? Yes ( ) No ( )
   If not – what is the reason?

4. Do you know the national policy statement on disability? Yes ( ) No ( )

5. Is there a ministerial policy statement on disability for your ministry? Yes ( ) No ( )
   If yes above (state the policy statement)

6. Have you been sensitized on how to handle clients with disability? Yes ( ) No ( )

7. Is there an inventory of clients with disability in your work station? Yes ( ) No ( )

8. Where do you get support for people with disability in your work station?

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### SECTION C

**ACCESSIBILITY**

Please tick the most appropriate option using the scale provided

1- Strongly disagree  
2- Disagree,  
3- Neutral  
4 – Agree  
5 – Strongly agree

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<td>9.</td>
<td>People with disability have a clearly stated entitlement in my work station’s service delivery charter</td>
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<td>10.</td>
<td>Our office buildings have provision for ramps in their design</td>
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<td>11.</td>
<td>There is at least one customized toilet facility for use by people with disability in our office building</td>
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<td>12.</td>
<td>Persons with disabilities have access to general agricultural extension services and technical guidance training on equal terms with others in my work station.</td>
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13. Are there any factors that you consider important to enable people with disability to access extension services in your work location? (Please specify)

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### SECTION D

**INFORMATION PACKAGING AND DISSEMINATION**

Please tick the most appropriate option using the scale provided

1- Strongly disagree  
2- Disagree,  
3- Neutral  
4 – Agree  
5 – Strongly agree

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<td>14.</td>
<td>There is specifically packaged information for use by people with disability in our station</td>
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<td>a) Periodic reports</td>
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<td>e) Posters</td>
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<td>f) Pamphlets</td>
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15. Information disseminated from our office has been presented in various forms to our clients
   a) Braille
   b) Audio
   c) Audio visual

16. During provision of extension services there is a requirement to provide sign language interpretation

17. Our collaborators in extension service provision have provided information about extension services accessible to people with disabilities.

18. Our office usually includes disability specific components when collecting general extension data and statistics.

19. The ministry of agriculture promotes and encourages its extension staff to use augmentative forms of information

20. Our office often measures and monitors resources concerning people with disabilities

21. Our department provides information to persons with disabilities and their families on diagnosis, rights and available services and accessible programmes

22. How have you been making information and documentation accessible to;
    Persons with hearing and impairment (deaf)?
    "
    Persons with intellectual disabilities?
    "
    Persons with reading and writing difficulties?
SECTION E
TECHNOLOGY TRANSFER

Please tick the most appropriate option using the guide provided

23. Are there any appropriate technologies developed by your office for use by people with disability?  
   Yes ( )  No ( )

24. If yes (in the question above) list the technologies below

25. In your office inventory is there any researchable topics under disability mainstreaming?
   Yes ( )  No ( )

26. How many research dissemination workshops have you attended that include people with disability?

27. How many value-addition technologies for agricultural products have been identified and documented for use by persons with disability?

28. People with disability in your work area have participated in the review and update of the agricultural research master plan. Yes ( )  No ( )

29. How many disabled farmers have participated in on-farm experiments that introduce new farming techniques?

30. What is the percentage of people with disability in the stakeholders’ forum of your station?  
   0% ( )  Below 10% ( )  10-30% ( )  30-50% ( )  Above 50% ( )

THANK YOU VERY MUCH
Appendix II: Focus Group Discussion Guide to Study Respondents

This survey instrument was developed to capture data on factors determining integration of Disability mainstreaming in Agricultural Extension Services in the Ministry of Agriculture in Machakos County, Kenya. The data obtained from this exercise will be used solely for a dissertation for fulfillment of the requirements For the Award of the Degree of Master Of Arts in Project Planning and Management of the University of Nairobi. Your institution has been identified as a key respondent in the extension service provision and regulation issues in Kenya. In this regard, you are kindly requested to participate in this discussion by providing answers to enable the researcher fulfill the research objective. Appropriate measures are in place to ensure confidentiality of your responses in this discussion.

AWARENESS

1. According to you, who is a person with disability?
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2. Name the forms of disability that you know about.
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---------What is the percentage of person with disability represented in
a. Stakeholders’ forum? ---------------
b. District/Divisional Agricultural Committee? ---------------

3. Mention any key subject areas known to you on disability that are to be addressed by
the national policy?
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4. What does your office service charter say on disability?
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5. What administrative measures has your office put in place to mitigate the challenges persons with disabilities face in order to live an acceptable and dignified quality of life?

6. How have you provided for the rights of persons with disability with regard to having access to buildings and other social amenities?

7. When was the last audit of buildings undertaken by your ministry for assessment of compliance with the requirement on accessibility in your office?

8. Is there a reserved parking space for persons with disability in your compound?

9. How many clients have accessed through your office
   a. Subsidized fertilizer? --------------
   b. Agricultural credit? --------------

10. Are there any factors that you consider important to enable people with disability to access extension services in your work location? (Please specify)

11. What is your department doing to promote the development and use of Braille and other communication formats and technologies accessible to persons with disabilities?

12. Have you been taking records for all people with disabilities in your District/Division?.

13. What kind of information, trainings and communication has your office disseminated in to people with disability the last one year?

14. Do you have a functional Disabilities Mainstreaming Committees set up in office?

15. If yes, what is their greatest achievement to date?
16. Does your office have any reports submitted for encoding in Braille for persons with visual disabilities?

17. Do you incorporate the Kenyan Sign Language inset in public forums like field days, on-farm demonstrations in the field on matters of national significance?----------

**TECHNOLOGY TRANSFER**

18. How many farmers have participated in the farm judging competitions in the last 2 years? --------------

19. Are there any appropriate technologies developed by your office for use by people with disability? 

   Yes ( )    No ( )

   If yes (in the question above) list the technologies below

   -----------------------------------------------------------------------------------

   -----------------------------------------------------------------------------------

   How many farmers with disability in your work area have participated in the review and update of the agricultural research master plan? --------------

20. How many disabled farmers have participated in on-farm experiments that introduce new farming techniques?

21. How many technologies for agricultural products have been identified and documented for use by persons with disability through your office? --------------

22. State the agricultural technologies being referred to above----------------------------------

   -----------------------------------------------------------------------------------

   -----------------------------------------------------------------------------------

   THINK YOU VERY MUCH
Appendix III: Kenya Disability Population Vital Statistics

Table 5.1: Kenya Population 2009, Persons with Disabilities by Sex and Type

<table>
<thead>
<tr>
<th>TYPES</th>
<th>MALE</th>
<th>FEMALE</th>
<th>TOTAL</th>
<th>% FEMALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual</td>
<td>153,783</td>
<td>177,811</td>
<td>331,594</td>
<td>53.6</td>
</tr>
<tr>
<td>Hearing</td>
<td>89,840</td>
<td>97,978</td>
<td>187,818</td>
<td>52.2</td>
</tr>
<tr>
<td>Speech</td>
<td>86,783</td>
<td>75,020</td>
<td>161,803</td>
<td>46.4</td>
</tr>
<tr>
<td>Physical/Self Care</td>
<td>198,071</td>
<td>215,627</td>
<td>413,698</td>
<td>52.1</td>
</tr>
<tr>
<td>Mental</td>
<td>75,139</td>
<td>60,954</td>
<td>136,093</td>
<td>44.8</td>
</tr>
<tr>
<td>Others</td>
<td>44,073</td>
<td>55,233</td>
<td>99,306</td>
<td>55.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>647,689</strong></td>
<td><strong>682,623</strong></td>
<td><strong>1,330,312</strong></td>
<td><strong>51.3</strong></td>
</tr>
</tbody>
</table>

*Source: Kenya Population Census, 2009, Volume 2*

Table 5.2: Population of Persons with Disabilities by Province and Sex, 2009

<table>
<thead>
<tr>
<th>PROVINCE</th>
<th>MALE</th>
<th>FEMALE</th>
<th>TOTAL</th>
<th>% FEMALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenya</td>
<td>64,768</td>
<td>682,623</td>
<td>1,330,312</td>
<td>51.3</td>
</tr>
<tr>
<td>Nairobi</td>
<td>34,293</td>
<td>32,077</td>
<td>66,370</td>
<td>48.3</td>
</tr>
<tr>
<td>Central</td>
<td>54,625</td>
<td>60,338</td>
<td>114,963</td>
<td>52.5</td>
</tr>
<tr>
<td>Coast</td>
<td>49,313</td>
<td>49,435</td>
<td>98,748</td>
<td>50.1</td>
</tr>
<tr>
<td>Eastern</td>
<td>98,681</td>
<td>105,819</td>
<td>204,500</td>
<td>51.7</td>
</tr>
<tr>
<td>North Eastern</td>
<td>37,231</td>
<td>30,225</td>
<td>67,456</td>
<td>44.8</td>
</tr>
<tr>
<td>Nyanza</td>
<td>139,172</td>
<td>163,338</td>
<td>302,510</td>
<td>54.0</td>
</tr>
<tr>
<td>Rift Valley</td>
<td>132,168</td>
<td>131,343</td>
<td>263,591</td>
<td>49.8</td>
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<tr>
<td>Western</td>
<td>102,206</td>
<td>110,048</td>
<td>212,254</td>
<td>51.8</td>
</tr>
</tbody>
</table>

*Source: Kenya Population Census, 2009, Volume 2*

Table 5.3: Disabled Persons Statistics in Kenya 2009

<table>
<thead>
<tr>
<th>Disability</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual</td>
<td>153,783</td>
<td>177,811</td>
<td>331,594</td>
<td>53.6</td>
</tr>
<tr>
<td>Hearing</td>
<td>89,840</td>
<td>97,978</td>
<td>187,818</td>
<td>52.2</td>
</tr>
<tr>
<td>Speech</td>
<td>86,783</td>
<td>75,020</td>
<td>161,803</td>
<td>46.4</td>
</tr>
<tr>
<td>Physical</td>
<td>198,071</td>
<td>215,627</td>
<td>413,698</td>
<td>52.1</td>
</tr>
<tr>
<td>Mental</td>
<td>75,139</td>
<td>60,954</td>
<td>136,093</td>
<td>44.8</td>
</tr>
<tr>
<td>Others</td>
<td>44,073</td>
<td>55,233</td>
<td>99,306</td>
<td>55.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>647,689</strong></td>
<td><strong>682,623</strong></td>
<td><strong>1,330,312</strong></td>
<td><strong>51.3</strong></td>
</tr>
</tbody>
</table>

*Source: Census 2009*
Table 5.4: Persons with Disabilities by Age, 2007

<table>
<thead>
<tr>
<th>Age group</th>
<th>Type of Impairment</th>
<th>Hearing</th>
<th>Speech</th>
<th>Visual</th>
<th>Mental</th>
<th>Physical</th>
<th>Self care</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-14</td>
<td></td>
<td>1.6</td>
<td>0.8</td>
<td>1.1</td>
<td>0.6</td>
<td>1.9</td>
<td>0.8</td>
<td>0.6</td>
</tr>
<tr>
<td>15-24</td>
<td></td>
<td>0.7</td>
<td>0.5</td>
<td>2.2</td>
<td>0.4</td>
<td>2.2</td>
<td>0.6</td>
<td>0.6</td>
</tr>
<tr>
<td>25-54</td>
<td></td>
<td>2.6</td>
<td>0.4</td>
<td>14.2</td>
<td>2.5</td>
<td>12.2</td>
<td>2.1</td>
<td>1.4</td>
</tr>
<tr>
<td>55+</td>
<td></td>
<td>4.8</td>
<td>0.8</td>
<td>20.6</td>
<td>2.4</td>
<td>25.8</td>
<td>3.4</td>
<td>1.6</td>
</tr>
<tr>
<td>Don’t know</td>
<td></td>
<td>2.3</td>
<td>0.3</td>
<td>7.4</td>
<td>0.9</td>
<td>11.0</td>
<td>5.4</td>
<td>0.1</td>
</tr>
</tbody>
</table>