Republic of The Gambia

The World Bank

AGRICULTURE AND NATURAL RESOURCES (ANR) POLICY (2017 – 2026)

Final

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LIST OF ABREVIATIONS AND ACRONYMS

AAITG	Action Aid International The Gambia
ADB	African Development Bank
ADB	Agricultural Development Bank
ADWAC	Agency for the Development of Women and Children
AEs	Agro-Ecologies
AEU	Agricultural Engineering Unit
AEZs	Agro-Ecological Zones
AGOA	African Growth Opportunity Act
AIS	Agricultural Insurance Scheme
ANR	Agriculture and Natural Resources
ANRP	Agriculture and Natural Resource Policy
AVISU	Agency for Village Support
CAADP	Comprehensive Africa Agriculture Development Programme
CFM	Community Forest Management
CFNPP	Cornel Food and Nutrition Policy Project
CRRN	Central River Region North
CRRS	Central River Region South
CRS	Catholic Relief Services
CU	Concern Universal
DAS	Department of Agricultural Services
ECOWAS	Economic for West African States
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FADSEP	Food and Agriculture Sector Development Project
FFHC	Freedom From Hunger Campaign
FNU	Food and Nutrition Unit
GAFNA	Gambia Food and Nutrition Agency
GAFSP	Global Agriculture and Food Security Programme
GDP	Gross Domestic Product
GEAP	Gambia Environmental Action Plan
GEF	Global Environmental Facility
GGC	Gambia Groundnut Company
GM	Genetically Modified
GNAIP	Gambia National Agricultural Investment Plan
GOTG	Government of The Gambia
IARC	International Agricultural Research Centres
IDB	Islamic Development Bank
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IFCD	International Fund for Cooperative Development
IFPRI	International Food Policy Research Institute
GATT	General Agreement on Trade and Tariffs
INGO	International Non-Governmental Organization
IPM	Integrated Pest Management

ISTA	International Seed Testing Association
IWRM	Integrated Water Resource Management
KFW/GTZ	Kredit fur Wiederaufbau/Deutsche Gesellschaft fur Technische Zusammenasbeit
LADEP	Lowland Agricultural Development Programme
LUC	Land Use Classes
MDG 1C	Millennium Development Goals
MECCWRPW	Ministry of Environment, Climate Change< Water Resources Parks and Wildlife
MOA	Ministry of Agriculture
MSY	Maximum Sustainable Yield
NA	Not Available
NACOFAG	National Coordinating Farmers Association of the Gambia
NAFSIP	National Agricultural and Food Security Investment Plan
NARI	National Agricultural Research Institute
NASS	National Agricultural Sample Survey
NARI	National Agricultural Research institute
NARS	National Agricultural Research Systems
NAWFA	National Women Farmers Association
NBR	North Bank Region
NEA	National Environment Agency
NEPAD	New Partnership for Africa's Development
NERICA	New Rice for Africa
NGOs	Non-Governmental Organizations
NHDA	National Horticultural Development Authority
NPK	Nitrogen phosphorous and potassium
NSC	National Seed Council
OECD	Organization for Economic Cooperation and Developmrnt
PPR	Pestes de Petites Ruminantes
PRSP	Poverty Reduction Strategy Paper
R&D	Research and Development
STU	Seed Technology Unit
TWh/year	Terawatt hour per year
UNCDF	United Nations Capital Development Fund
UNDP	United Nations Development Programme
UfW	Unaccounted-for-Water
UPVO	International Union for Protection of New Varieties of Plants
UTG	University of The Gambia
VRC	Variety Release Committee
WAAPP	West African Agricultural Productivity Project
WB	World Bank
WCR	West Coast Region
WDM	Water Development Management
WTO	World Trade Organization

FOREWARD BY MINISTER OF MOA

The overriding objectives of the national agricultural and natural resources development efforts since the Economic Recovery Programme of 1985 have been poverty reduction and improved food security through the revitalization of the ANR sector and the efficient use of resources. Whilst the measures and strategies of the implicit policy adopted have generally effected some marginal improvements in coarse grain production resulting in some value-added and growth of the ANR sector's contribution to GDP, they have failed to effectively guide resource allocation and the development of sustainable production systems and significantly address the increasing income and productivity disparity between the sector and the rest of the economy, in particular the manufacturing sector. The overall sluggish growth of the economy and slow pace of structural changes during the last 20 years (1995/2015) have paradoxically resulted in a beyond trend increase in the ANR's share with respect to the major macro sectoral parameters such as employment and value added but more importantly in deepening poverty and increased food, income and nutrition insecurities.

The manufacturing sector under-preformed the ANR sector as the economy stagnated at best in its transition to an industrialized state and became more subordinately linked to and dependent on world trade and economy. Despite some improvements in linkages between ANR and the manufacturing sectors, substantial inter-sectoral differences in rates of output growth, productivity and technological use have posed new and difficult challenges. It has brought into sharper focus and greater urgency the need for food production, employment of new/improved technologies and intensification of R&D, factor productivity increases and factor use changes, and most importantly the need for the sector to remain competitive, dynamic and market-driven. The role and thrust in particular of international marketing have become a matter of strategic significance.

Some changes in the fundamentals within ANR are required over the next decade 2017/2026 to deepen and expand sustainably its contribution to and role in an economy that is primarily agrarian. Changed policy content and thrusts of strategies for ANR sector development is thus over-due and this ANR Sector Policy for the period 2017-2026 is proposed to embody this reorientation. The document contains two parts: PART I, which is an assessment of the performance of the ANR sector since 1995 with particular reference to the resource base, production and productivity trends, agro-industrial development, and proffers a clear definition of the emerging and persistent constraints facing the sector's present and future development; and, PART II, which contains the strategies and policy content of our ANR Policy for the period 2017-2026, spells out the mechanisms for downstream developments for the integration of ANR with manufacturing as an instrument for creating a balanced inter-sectoral growth and the supportive infrastructure to achieve the desired level of transformation of the sector on a sustainable basis.

A gap analysis of the terminating 1st generation GNAIP Medium-Term Strategic Plan conducted during the review process leading to the formulation of this ANR Policy identified some critical investment gaps which are appended herewith for consideration in the 2nd generation GNAIP. We will ensure that these investment proposals are accorded priority consideration in the policy objective and strategy contents of our 2nd GNAIP which is in its active planning stage.

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Honourable Minister of Agriculture

MESSAGE BY MINISTER OF ECCFWRPW

As the Minister for Environment, Climate Change, Fisheries, Water Resources, Parks and Wildlife of the Republic of The Gambia, I wish to thank all individuals as well as public, private and donor partner institutions including civil society organizations and the NGO community for having contributed to the review of the one and half decades leading to and through the 2009 – 2015 ANR Policy and towards the formulation of the 2017 – 2026 ANR Policy. My thanks are also extended to our Regional Directors, National Technical/Service Unit Directors and Heads of key stakeholder institutions in the ANR Sector for their efforts and sacrifices in providing invaluable information and personally attending review and strategizing meetings with our consultant in this matter. The indispensible inputs of our Research Assistants in the persons of Messrs Ebraima Cham and Famara Kolley of the Department of Planning Services and Mr. Abdoulie Ceesay, a final year Agricultural Student, of the University of The Gambia deserve special mention.

The review of the 2009 -2015 ANR Policy was necessitated by the urgency of the need for the ANR Sector to make swift and sustainable adaptations in consonance with the long-term sector objectives and strategic issues of Vision 2020 and the rapid structural changes in the domestic economy, to enable it to increase its contribution to the overall growth and transformation of The Gambia into a middle-income country by the end of the first quarter of the 21st Century.

The 2017 – 2026 ANR Policy emphasizes the optimum and sustainable utilization of resources and commercialization of the sector with value chain oriented growth. It is founded on the premise of the predominant role of the private sector and incorporates the developmental philosophy of Vision 2020.

The 2017 – 2026 ANR policy outlines the actions to mitigate the persisting constraints/challenges of the 1995/2015 decades, responsibilities of all parties concerned as well as the opportunities in the ANR sector. The private sector including farmers' and fishermen's institutions, individuals, the corporate and public sectors should co-operate to overcome the constraints/challenges facing the sector with a view to increasing its growth whilst benefitting the people through sustained contribution to food, income and nutrition securities for poverty reduction and national development consistent with maintaining the integrity of the environment for posterity.

……..
The Honourable Minister of Environment,
Climate Change, Water Resources, Parks
and Wildlife.

EXECUTIVE SUMMARY

Part I: REVIEW OF THE ANR SECTOR DEVELOPMENT SINCE 1995

INTRODUCTION AND BACKGROUND TO THE 2017 – 2026 ANR POLICY

1. Although Vision 2020 is the genesis of an articulated consolidated ANR policy, sub-sectoral policies of both institutional and operational nature dated from the late 1940's.
2. To pursue the sectoral objectives and strategic issues of the Vision in a more concerted and focused manner, the GOTG enjoined all Line Ministries to formulate a national sectoral policy for their respective sectors.
3. The Ministry of Agriculture formulated and adopted the ANR Policy 2009-2015 and The Gambia National Agricultural Investment Plan (GNAIP) as its Medium-Term (2011-2015) Strategic Plan.
4. The Medium-Term ANR (1998-2002) and the FAO-supported National Agricultural Development–Horizon 2010 provided the policy framework of the sector for the period 1995-2008 with the following areas of concentration:- forestry, livestock, land & water, rural water supply & sanitation, cooperative development, crop production and rural finance.
5. The 2009 – 2015 ANR policy and the medium-term GNAIP 2011 – 2015 provided the policy framework for the ANR sector for the period 2009 – 2015 with following areas of concentration:- livestock, land & water, crop & food production, rural finance, research, market development, forestry, input/equipment & storage, fisheries, climate change, tourism and parks & wildlife.
6. In addition to the foregoing ANR policy frameworks adopted during the period 1995 – 2015, a number other important sectoral and sub-sectoral policies of relevance to the ANR sector were implemented in parallel with these frameworks.
7. In spite of the foregoing efforts of the government supported by its donor partners, civil society and the private sector, The Gambia remains among the poorest countries in the world and a net food importer. Poverty increased during 1995-2003 period, with about 30% of Gambians living in extreme poverty which deepened further to 37% in 2010 though overall poverty decreased significantly from 58% in 2003 to about 40% in 2010. Incidence of poverty is highest in the rural groundnut growing areas.
8. The principal underlying causes of the afore-depicted scenario have been repeated weather-related shocks and the July 22nd 1994 shocks. The sum effect of these shocks continued to be exacerbated and perpetuated by both persistent macroeconomic and ANR policy slippages.

AN OVERVIEW OF THE NATURAL RESOURCE BASE

9. With a population of 1.88 million (2013 census) projected at 1.96 million in 2015, The Gambia is one of the smallest West African countries. Its ecology is predominantly drought Sahelian shrub-land.
10. The country has a Sudano-sahelian climate, characterized by a long dry season (November to June), and a short wet season (July to October).
11. Some 56% of the country's total land mass or about 555,240 ha, are considered suitable for agriculture and are utilized for upland cereal and groundnut production as well as for grazing and fallow. Gambian soils are generally poor and have deteriorated over the past 20 years.
12. About 43% of the total land mass (425,000 ha.) is under natural vegetation cover. Of this total vegetation cover 302,000 ha are categorized as forest as at 2010. Despite an overall degradation of the environment and the change of land use in the last 20 years, The Gambia is still relatively rich in biological diversity.

13. The water resources of The Gambia consist of three forms: seasonal rainfall, surface and underground water regimes. All of these water regimes vary both spatially and temporally in terms of quantity and quality.
14. The Gambia is endowed with considerable riverine and marine fish resources. The country is located within the Eastern Central Atlantic Ocean, an area classified as one of the richest fishing zones of the world.
15. About 40% or 371,200 ha of the total land area are regarded as rangeland of which only 5,000 ha are classified as improved pasture as at 2010. Recent estimates (2011) put the national herd at about 398,472 cattle, 143,982 sheep, 302,878 goats, 6,385 pigs, 16,902 horses, 55,527 donkeys and 1,870,376 poultry with a livestock density of over 42 units/ha which is one of the highest in sub-Saharan Africa.
16. The foregoing review of the major environmental resources of the country reveals ample opportunities for enhancement of the production and productivity of the ANR sector but also masked serious underlying environmental problems and processes which are threatening the long-term productive potentials of the sector.

SECTORAL PERFORMANCE SINCE 1994

17. Following the shocks of the 22nd July 1994, the economy recovered from a negative growth rate to a stagnant positive growth rate of about 5% per annum since 1996. The ANR sector surpassed the manufacturing sector in terms of macroeconomic parameters, reaffirming its primacy in the economy.
18. During the period 1995-2008 macro level monetary and exchange rate policies were more favourable for growth of other sectors especially redistributive trade than for ANR. At the micro level, the impact of erratic rainfall pattern was exacerbated by major problems including shortage of labour saving-devices, lack of yield enhancing inputs especially fertilizer, farm labour shortage and lack of incentive markets and marketing arrangements.
19. During the 2009 – 2015 ANR policy era the ANR sector continued to surpass the manufacturing sector in terms of macroeconomic parameters indicating a continuation of the structural status quo of the economy as in the 1995/2008 period which reasserted the primacy of ANR sector. However, in spite of the huge investment efforts in implementing the GNAIP the overall development of the sector continued to be beset with similar sets of problems both at macro and micro levels as in the pre-2009/2015 ANR era.
20. At the macro level, the persistent monetary and exchange rate policy slippages were less unfavourable for the growth of other sectors especially redistributive trade than for ANR. At the micro level, the impact of erratic rainfall pattern continued to be exacerbated by the same major problems as in the 1995/2008 period.

PRODUCTION TRENDS – 1995/2015

21. The strategy for National Agricultural Development Horizon 2010 adopted by government in November 1996 established physical targets for land-use, crops, livestock and fisheries and an annual resources requirement of about US$8 million for the period 1997/2010. The Medium-Term ANR Policy Objectives and Strategies adopted those targets for 2005. However, neither the US$8 million annual resource requirement nor the incremental growth targets and goals were met.

22. On the contrary, a significant decrease in the incremental livestock population for all species was experienced: with cattle, poultry and pig population declines of 140.41%, 104.49%, 99.8% respectively and a slight decline for small ruminants (sheep and goats) at 0.03% from their Medium-Term Plan targets. The national food production and imports implications of the foregoing analysis of the programme performance were disastrous.
23. Aligned with the stated policy objectives and strategies of the 2009 – 2015 ANR policy, the GNAIP focused on six programme areas: improvement of agricultural land and water management; improved management of other shared resources; development of agriculture chains and market promotion; national food and nutrition security; sustainable farm management; and, GNAIP coordination, monitoring and evaluation with an anticipated budgetary allocation of 10% of the national budget by 2015.
24. Using the three major sources of domestically produced food – crops, livestock and fisheries, as an index of the state of national food production for the period 2008/09 to 2014/15, the overall national performance of the 2009/2015 ANR policy and its GNAIP implementing instrument have been lacklustre.
25. The expectation that Government budgetary allocation to ANR would be increased to at least 10% in 2012 to 2015, in line with the Maputo Declaration, did not materialize though substantial resources accrued from other expected financing sources outside the government. Overall, the imports of domestically grown commodities have shown visible decline but rice, milk and fish imports showed an increasing trend, thus, underscoring the need for intensified import substitution policy efforts.

PRODUCTIVITY TRENDS – 1995/2015

26. In the pre-2009 – 2015 ANR Policy the sector maintained a labour productivity growth rate of 3.64% in the period 2001/2005 per annum, compared to 9.62% in the period 1996/2000 reflecting the decades (1996-2005) growth rate of 6.63% which is substantially higher than the whole economy growth rate of 0.01% but substantially lower than manufacturing growth rate of 14.56%. There is evidence of decreasing disparity of worker productivity between agriculture and the manufacturing sectors (and the implied income differences) in the period 1995/2005.
27. In the 2009 – 2015 ANR Policy era the sector maintained a labour productivity declining rate of 4.85% in the period 2010/2015 per annum, compared to 3.96% in the period 2006/2010 reflecting the decade (2006-2015) declining rate of 0.45% which is extremely poor compared to the whole economy growth rate of 2.49% and manufacturing growth rate of 2.13%. The major part of the decrease in overall sector labour productivity is attributed to declining productivity of the crop production sub-sector.

AGRO-BASED INDUSTRIES DEVELOPMENT – 1995/2015

28. The growth and development of agro-based industries was not explicitly emphasized in the 1994-2005 agricultural policy stance despite their potentials in the creation of off-farm jobs, expanding raw materials outlets and adding value to such produce and, the provision of overall stimulus to growth through further inter-sectoral integration. A new and strong emphasis in the development efforts of this sub-sector will be placed by the 2017-2027- ANR Policy.
29. Structurally the sub-sector has changed slightly during the 2009/2015 period by the entry of three more new enterprises. However, the sub-sector has not changed significantly in terms of absolute number of enterprise types since 1994. Thus, the overall conclusion of the performance of the subsector and its implications for poverty reduction consistent with food, income and nutrition

securities and, economic integration and growth observed holds true for both the 1994/2008 and the 2009/2015 periods.

CONSTRAINTS TO ANR SECTOR DEVELOPMENT

30. Overall Sector Constraints: despite its primary role in the economy, ANR's share in total employment and most importantly its contribution to exports have been on the decline. This is due to adverse climatic conditions, declining international primary commodity prices and, inadequate domestic policies.
31. Sub-Sectoral Specific Constraints: **traditional food and cash crop sub-sector** is principally constrained by erratic rainfall pattern and the inherent low fertility/productivity of the land; **horticultural production** is constrained by lack of access to markets, inadequate processing and marketing facilities, poor production organization, lack of copious water and energy supplies and poor land development; **livestock output** continues to be constrained by frequent outbreak of diseases; poor and inadequate husbandry practices; scarcity of feed, fodder and drinking water; **fisheries sub-sector** is constrained by a myriad of economic, physical, technical, institutional and social factors; and, **forest and wildlife sub-sectors** combined output is principally constrained by frequent and uncontrolled bushfires, high cost of forestry and wildlife development, inadequate human and financial resources, deforestation and lack/weak involvement of local communities in wildlife management.
32. Institutional Support Services and System-Wide Constraints: **technical departments** are constrained by inadequate incentives, unconducive work environment, inadequate funding and inadequate number of trained high level and middle level manpower; **farmer organizations** are constrained by over-involvement of the Government, failure to transform farmer groups into producer cooperatives, and lack of sustainable financing; **extension services** are constrained by inadequate improvement and development through continuous training, inadequate resources, large extension worker/famer ratio, limited knowledge and skills and lack of robust mobility; **agricultural research** is principally constrained by lack of financial resources to implement the essentials of the Agriculture Research Master Plan; r**ural finance and input/output marketing** are constrained by lack of clear cut rural finance policy, too many actors with conflicting agendas and lack of adequate skills in the management of rural finance system; a**gricultural mechanization** is limited by low promotion of draught animal technology and high cost of equipment and draught animal; **land and water resources** are constrained by fragile soils, land tenure system, salinization and erosion, decline in the use of fertilizer, fluctuating rainfall trend, excessive exploitation of the upper or shallow sand aquifer and lack of appropriate renewable energy technologies to exploit the huge deep sand stone aquifer water resources; **gender output** is constrained by lack of property rights, small-scale of operations, the use of traditional production technologies, low access to productive resources and inadequate distribution and marketing system; h**ousehold food security** is constrained by low local production and dependence on imports and external food aid; and, **environment** is constrained by deleterious farming methods & resource harvesting techniques, ill-conceived mechanization policy, irrational & unsustainable resource use patterns, lack of mainstreaming/incorporation of climate change aspects into most sub-sectoral policies, and limited development of local conventions on natural resource management.

Part II: AGRICULTURE AND NATURAL RESOURCES (ANR) POLICY 2017 - 2026

RATIONALE

33. Despite the Government's stated policy objectives and strategies over the last twenty years the ANR sector registered remarkable deterioration. The food sub-sector in particular, experienced persistent decline with resultant dependence on food imports at a huge CIF cost ranging from D84 million in 1994 to about D1.923 billion in 2014 for only rice imports and non-rice imports of locally produced food commodities ranging from D115 million in 1995 to D1.716 billion in 2015.
34. At the macro level, the overriding policy objectives continue to be a mirage. At the micro level, the expectations for improved living conditions for the majority of the population have not yet been realized whilst farming/production methods continue to be at the detriment of environmental integrity.
35. These conclusions of the brief analysis in Part I of the ANR sector's performance over the last two decades, 1995 to 2015, clearly indicated the emerging and persistent constraints facing the sector's present and future development.

THE VISION

36. Thus, the 2017 – 2026 ANR Policy is designed as a significant departure from the development emphasis and thrusts of the last twenty years and is therefore, founded on a vision for the creation of a ***marketed-led commercialized, efficient, competitive and dynamic ANR sector in the context of sustainable development.***

OBJECTIVES

37. Apropos to its aforesaid vision, the Policy will be guided by the attainment of ***the over-arching objective of maximization of poverty reduction and enhancement of food, income and nutrition securities through the optimal utilization of the resources of the sector consistent with safeguarding the integrity of the environment.***

MACRO-SECTORAL FRAMEWORK (2017-2026)

38. The projections of value-added, production, employment, factor productivities, local raw materials utilization rate and sources of growth of output reflective of the analyses of the production and productivity trends above embody the underpinning and specific objectives of our ANR Policy (2017-2026) consistent with market driven growth of the economy.
39. Overall the ANR production base is unlikely to substantially expand and diversify; it however, will be rationalized and deepened while food production will be increased substantially through intensive and limited expanded cultivation of tidal and upland rice to improve the self-sufficiency level of domestic rice from 20% in 2004 to about a target of about 50%.
40. With increasing land constraints, greater emphasis will be on increasing land and labour productivities and intensity of land use as well as changes in land use pattern.
41. New employment opportunities in the production of traditional food crops is limited as relatively little new land can be opened up for cultivation. Thus in crop production, land/man ratio will reduce while livestock rearing, fishing and horticulture will be increasingly capital intensive. Rationalization of, and changes in the production processes in all sub-sectors in the face of increasing labour cost

will change the factor proportions and higher labour productivity will be a consequence of the above transformation in consonance with the anticipated 2017/2026 macro-sectoral framework.

42. Modernization, structural reorganization and rationalization of ANR production systems with a view to increasing productivity and, expanding and diversifying the production processes will require substantial expansion of capital expenditure in horticulture (olericulture, pomology and floriculture), livestock rearing, forestry and wildlife, fisheries, ground water resource exploitation and the integrated development of related agro-based industries.
43. Fiscal incentives and other macro-economic policies will be further reviewed to be promotive of environment friendly investments in ANR and agro-based processing/downstream activities vis-à-vis redistributive trade in particular.

KEY STRATEGIC ISSUES

44. The realization of 2017/2026 ANR policy objectives will continue to be constrained by myriad of constraints identified by the Review Meetings and summarized in 1.7 above, will be mitigated through the resolution of only four but key strategic policy issues.

STRATEGIES

45. The realization of the underlying growth and developmental objectives of the over-arching objective of the ANR Policy (2017/2026) will be pursued through eight strategies.
46. A key strategy to spur and sustain the potential growth momentum of the sector is to **optimize the use of its resources** of land, labour, capital and entrepreneurial/management.
47. ANR growth will be improved and sustained through **integration of the sector with manufacturing.** The raw materials available for further integration include rice, coarse grains, fruits, vegetables and fish.
48. **R&D technological advancement** and technical changes are required to overcome the production process, labour and other factor constraints in ANR sector.
49. The transformation of the ANR sector into a competitive and efficient sector will require substantial investments and technological **resources from the private sector** of both local and foreign investors.
50. Successful marketing of ANR will be a necessary pre-condition for further growth in the export market. The further entry into international market will need an **efficient marketer strategy** rather than that of a commodity trader to minimize the disadvantages of a price taker. Domestic marketing of ANR products will emphasize product competitiveness and user orientation.
51. The Gambia is a net importer of rice, the country's staple food, and all other basic food needs including raw materials for agro-based industries. The self-sufficiency rate for its staple rice food is about 17%. Thus, **expansion of food production** for import substitution, domestic demand and export market present opportunities for increasing output and income in the ANR sector.
52. **Human resource development** will be one of the key strategies to achieve increased productivity and output of labour and land. New technological processes and methods, equipment and new demands consequent to the globalization of the economy and issues related to sustainable development in the wake of climate change and conservation of biodiversity will require a critical mass of adequately trained skilled manpower in the ANR sector.
53. Self-help, self-improvement and attitudinal change are at the core of the strength of commodity groups to spearhead innovations and active participation of **farmers'/fishermen's associations and agro-based cooperatives** in the modernization process of ANR development. The ANR policy (2017 –

2026) will tackle the major constraints to the activities of farmers'/fishermen's institutions through mitigating the low capital base and lack of technical, managerial and expertise.

SUB SECTORAL/ENTERPRISE POLICIES

54. ANR sector is inevitably affected by macro-economic stabilization reform policy measures. There are four main macroeconomic policy instruments through which government will exert significant influence on the agricultural production environment. These are Price Support; Marketing; Input Supply; and, Credit.
55. The ANR macro-economic related policy with respect to the four main policy instruments will be re-examined and re-directed to facilitate improved growth performance of the ANR sector.
56. The main annual crops grown in The Gambia are food and cash crops. The common policy strand which circumscribes these two classes will be one of a ''value-chain approach'' which will emphasize intensification of productivity and production.
57. The problems faced by women in agricultural production are immense, and include: limited access to land, credit, appropriate technologies, training and marketing. The gender mainstreaming policy strand will focalize on these problems as its policy threads.
58. The need to satisfy the increased demand for animal products and to ease pressure on natural resources imposed by animals will be mitigated through intensification approach.
59. The continued growth and expansion of the livestock industry will depend on the availability of quality, reliable and cheap supply of animal feed and feed supplements. Thus, further efforts in diversifying the rudimentary feed industry will be undertaken to sustain the comparative and competitive advantage in the production of non-ruminant meat, eggs and milk for domestic consumption as well as for expanded export.
60. ANR institution/services policy will be based on principles of decentralization, privatization, divestiture and people's empowerment.
61. The policy strand of forestry sub-sector for the period 2017/2026 will be improving and maintaining forest resources through greater involvement of the local communities in the effective management of existing natural forest cover. The specific forest policy goal will continue to be the development of 30% of the total land area into forest, of which 75% will be under community and private sector management.
62. The parks and wildlife sub-sector policy strand for the period 2017/2026 will be addressing the underlying causes of biodiversity loss through greater and systematic involvement of the population, in particular satellite local communities, in their effective management and the specific parks and wildlife policy goal will continue to be the expansion of protected areas coverage of 10% of total surface area.
63. The agricultural commodity marketing policy will be based on the principle of totally liberalized input/output commodity markets with public sector involvement strictly limited to regulatory functions, provision of marketing infrastructure and services of public goods nature and implementation of supportive macroeconomic policy as defined in 55 above.
64. The food security policy will be enhanced availability through increased domestic production of nutritious and safe food, improved access and enhanced stability of supplies through effective processing, storage and food reserve mechanisms.
65. The horticulture sub-sector policy will be the promotion of high-valued crops through the development of private sector horticultural enterprises and small-scale out-growers schemes and establishment of a National Horticultural Development Authority (NHDA).

66. The overall Fisheries sub-sector policy strand will aim at optimizing value-added, improved export earnings, greater employment opportunities and enhanced contribution to improved nutritional status consistent with the rational exploitation of the resource base.
67. The agricultural mechanization policy will be animal traction as the most appropriate immediate advance from hand tools followed by 2-Wheeled tractors and limited and selective application of 4-Wheel tractors.
68. The environmental management policy will be based on sound partnership among the farming community, the private and public sectors in the integration of ANR production systems and effective implementation of the Gambia Environmental Action Plan (GEAP).
69. Given the primacy of water to life on earth and its nurture and sustenance, the common core public policy for the two sub-sectors will be an integrated water resource management (IWRM) approach.

DOWNSTREAM DEVELOPMENT

70. The integration of ANR sector with manufacturing sector will be instrumental in creating a balanced inter-sectoral growth as the country moves towards becoming an industrialized country as envisaged by Vision 2020. A synergistic two-way demand and supply flows between the two sectors combined with further growth in the utilization of either wholly indigenous or in combination with imported materials will feature the importance of ANR in the overall industrialization process.

SUPPORTIVE INFRASTRUCTURE

71. To achieve the desired level of transformation of the ANR sector on sustainable basis within the fore-seeable time horizon of 2026 this policy will pay special attention to improved supportive infrastructures of: incentive schemes; research and development; extension services; agriculture credit/finance; and, marketing.
72. To expand and deepen the support for changes necessary in the transformation of ANR sector into Commercialized Sector to produce food and raw materials for the nation, **existing fiscal incentives** will be reviewed, improved and restructured.
73. Growth and development in ANR production and trade will require competitiveness, new production processes and methods, product development, new technological options and sustenance of comparative advantage and **R&D** will be a crucial instrument for these.
74. **Extension services** are crucial link between the researcher and farming clientele. The ANR Policy 2017 – 2026 will emphasize the development of special links between technology generators and adopters through the extension agencies.
75. **Adequate credit** to finance capital investment and operating expenses is essential for expanding the productive base, introduction of innovation and adoption of new technologies. The establishment of an Agricultural Development Bank (ADB) will make credit available to meet the various requirements in the ANR sector.
76. The Gambia is a member in many sub-regional, regional and global trade agreements. These memberships confer the country with enormous opportunities to adopt a **new marketing culture** to undertake marketing of ANR products based on a long-term survival instincts and needs of a corporate entity that recognize Vision 2020: The Gambia incorporated.

PART I: REVIEW OF THE ANR SECTOR DEVELOPMENT SINCE 1995

1.1 INTRODUCTION AND BACKGROUND TO THE 2017 – 2026 ANR POLICY

1.1.1 Introduction

Sub-sectoral policies of both institutional in terms of legal acts and their implementing regulations and, operational in terms of development schemes and strategy documents in The Gambia dated from the early colonial efforts of the late 1940's. However, Vision 2020 is the genesis of an articulated consolidated Agriculture and Natural Resource (ANR) policy.

The Government of The Gambia (GOTG) formulated and launched a national vision code-named ''The Gambia Incorporated…Vision 2020'' in 1996 as a framework document to guide the transformation of the country to the goal of a middle-income, export-oriented country by the end of the first quarter of the 21st century. This framework document defined long-term objectives for, provided a synthesis of the present situation and précised strategic issues for each of the major sectors of the economy and society at large. It adopted the Bretton Woods Institutions-sponsored Poverty Reduction Strategy Papers (PRSP) in place of its Strategy for Poverty Alleviation (SPA), which better reflects concerns for the Millennium Development Goals, to pursue its Vision 2020. It implemented two PRSPs: PRSP I (2003-2005) and PRSP II (2007-2011), subsequently replaced by the Programme for Accelerated Growth and Employment (PAGE, 2012-2015). Additionally, to pursue the sectoral objectives and strategic issues of the Vision in a more concerted and focused manner, the GOTG enjoined all Line Ministries to formulate a national sectoral policy for their respective sectors.

Pursuance to the implementation of the foregoing directive the Ministry of Agriculture formulated the ANR Policy 2009-2015 which was approved by the National Assembly for adoption and implementation in 2009. To support the implementation of the Policy, the GOTG further formulated and adopted The Gambia National Agricultural Investment Plan (GNAIP) as its Medium-Term (2011-2015) Strategic Plan towards achieving the vision for the agricultural and natural resources (ANR) Sector and food security in the country within the framework of the New Partnership for Africa's Development (NEPAD) Comprehensive Africa Agricultural Development Programme (CAADP). Thus, within the framework of the implementation of the ANR Policy (2009-2015), the sector has been given renewed emphasis since 2009 by the country including, bilateral and multilateral development partners, the African Union and ECOWAS. Civil society organizations, international non-governmental organizations (INGOs), as well as the private sector also contributed significantly to the development efforts in the sector.

1.1.2 Background

The Medium-Term Agriculture and Natural Resources Policy Objectives and Strategies and the FAO-supported National Agricultural Development–Horizon 2010 provided the policy framework of the government for the sector for the period 1995-2008. Since the elaboration of the Medium-Term Agricultural and Natural Resources Sector Policy Objectives and Strategies (1998-2002) and the strategy for National Agricultural Development Horizon 2010, the government initiated the implementation of a large number of programmes and projects and technical assistance within the framework of its poverty reduction and household food security objectives with the technical and financial assistance of some of its key traditional donors. These include United Nations Development Programme (UNDP), Islamic Development Bank (IDB), European Union (EU), African Development Bank (ADB), International Fund for Agricultural Development (IFAD), United Nations Capital Development Fund (UNCDF), International

Fund for Co-operative Development (IFCD), Food and Agricultural Organization (FAO), the Kredit fur Wiederaufbau/German Technical Agency (KFW/GTZ) of the Federal Republic of Germany and the Republic of China. **Appendix 1.2** presents the details of these interventions in terms of title, objective, duration, cost, donor and status. Areas of concentration of these programmes and projects include:-

i. Forest resource development;
ii. Livestock development;
iii. Land and water development;
iv. Rural water supply and sanitation;
v. Cooperative development;
vi. Crop production; and,
vii. Development of rural financial markets.

The 2009 – 2015 ANR policy and the medium-term GNAIP 2011 – 2015 provided the policy framework for the ANR sector for the period 2009 – 2015, in pursuit of the ANR long-term strategic objectives of Vision 2020. Since the adoption of this policy framework, the government with the support of some of its key traditional donors including the Non Governmental Organization (NGO) community implemented and/or are implementing a large number of programmes and projects and technical assistance with the framework of GNAIP**.** These include UNDP, IDB, EU, ADB, Global Agriculture and Food Security Programme (GAFSP), IFAD, WB, Global Environment Facility (GEF), United Nations Environment Programme (UNEP), NAPA, FAO and the NGOs {Action Aid International The Gambia (AAITG), Agency for the Development of Women and Children (ADWAC), Agency for Village Support (AVISU), Catholic Relief Service (CRS), Concern Universal (CU), Freedom From Hunger Campaign (FFHC) and Gambia Food and Nutrition Association (GAFNA)}. Details of the programmes and projects in terms of title, objective, duration, cost, donor and status are presented in **Appendix 1. 3.** Their areas of concentration include:-

i. Livestock development;
ii. Land and water development;
iii. Crop and food production;
iv. Development of rural financial markets;
v. ANR research development;
vi. Commercialization and market development
vii. Forest resource development;
viii. Agricultural Input/Equipment and Storage;
ix. Fisheries Development;
x. Climate Change Variability and Adaptation;
xi. Tourism Development; and,
xii. Parks and Wildlife Management.

In addition to the foregoing ANR policy frameworks adopted for implementation during the period 1995 – 2015, a number other important sectoral and sub-sectoral policies of relevance to the ANR sector were adopted, implemented and/or under implementation in parallel with these frameworks. Key among these are the National Trade Policy (2011 – 2016) , National Policy for the Advancement of Gambia Women, Youth Policy (2009 – 2018), National Nutrition Policy (2010 – 2020), Forestry Sub-Sector Policy (2010 – 2019), National Seed Policy (2008), Biodiversity and Wildlife Policy (2003), National Water Policy (2006), Fisheries Policy (2007), National Biodiversity Strategy and Action (NBSAP) and Gambia Environmental Action Plan II (2009 - 2018).

In spite of the visible efforts of the government supported by its donor partners and civil society mainly the NGO community and the private sector, The Gambia remains among the poorest countries in the world. Poverty measured by Human Development Index, the country ranked 151 out 175 nations in 2003, 168 out of 182 in 2008, 168 out of 175 in 2011 and 175 out of 188 in 2014. Per capita income, at nominal exchange rate, was about US$415 in 2004, rose up significantly to US$579 in 2010 but dipped down to about US$544 in 2012 (GBOS figures). Poverty has increased during the 1995-2003, with about 30% of Gambians living in extreme poverty which deepened further to 37% in 2010 although overall poverty decreased significantly from 58% in 2003 to about 40% in 2010. Poverty remains primarily a rural phenomenon, as 62% of households in rural areas were extremely poor in 2010 compared to 60% in 2003. Male-headed households accounted for about 88% of the population living below $US1.25 per day in 2010 in contrast to 2003 which showed that female-headed households had higher poverty rates compared to their male counterparts. This reversal of the trend is probably due to three main reasons: female-headed households tended to be smaller in size than male-headed households, they received more remittances and their proportion in agriculture has decreased significantly compared to 2003. Incidence of poverty is highest in the rural groundnut growing areas, especially in the eastern and northern parts of the country.

The Gambia is a net importer of food, as the country produces, at the best of times, about 50% of its national requirements of staple foods. Yields of staple food crops are relatively low and inadequate to meet the year-round household food demand of most rural households. Food security in rural areas in The Gambia depends primarily on farm household production and the income derived from it. As is the case with rural households, food security among urban households in general has deteriorated in recent years due to inadequate supplies from local production, increasing food prices and a depreciating Dalasi, which makes imported food expensive.

The foregoing analysis reveals a staggeringly scaring different trend from the 1992 picture of 23% poor urban households and 37% poor rural households. Comparable information from FAO showed that the situation of under-nourishment in The Gambia deteriorated from 17% in 1990/92 to about 25% in 1995/97. This alarming trend appears to persist as evidenced by the country's ranking of 32nd on the International Food Policy Research Institute's (IFPRI) Global Hunger Index of 2014 with a score of 13.6 and was categorized within the serious' hunger range.

The principal underlying causes of the afore-depicted scenario have been one of repeated weather-related shocks and the July 22nd 1994 shocks. The sum effect of these shocks continued to be exacerbated and perpetuated by both persistent macroeconomic and ANR policy slippages. There have been about eleven instances of drought in The Gambia over the last fifty years of which four occurred in the recent twelve years. In a rather frantic effort to keep the economy afloat, policy slippages have become the order of the day rather than exceptions.

1.2 AN OVERVIEW OF THE NATURAL RESOURCE BASE

With a population of 1.88 million (2013 census) projected at 1.96 million in 2015, The Gambia is one of the smallest West African countries. It consists of a narrow strip of land, some 480 km long and varying in width from 48 km in the estuary of the river to 24 km inland, on both sides of the Gambia River, which bisects it. It lies between latitudes 13^{0}N and 14^{0}N, and, except on the short Atlantic coast, the country is straddled by Senegal on all sides. Its ecology is predominantly drought Sahelian shrub-land.

The country has a total surface area of about 1,046,000 ha. **Appendix 1.1** presents the detailed land use classification of this area into four major classes and sub-classes and their areas. The four major land use classes (LUC) are forest (302,000 ha.), other wooded land (123,000 ha), other land (503,000 ha.) and inland water (118,000 ha.) areas as at 2010.

1.2.1 Climatic Resources

The country has a Sudano-sahelian climate, characterized by a long dry season (November to May), and a short wet season (June to October). Rainfall ranges from 850 mm to 1200 mm per year, while the temperatures average from 18 to 30 degrees Celsius during the dry season and from 23 to 33 degrees Celsius during the wet season. Evapo-transpiration exceeds rainfall in two of the five months of the growing season and rainfed crop production is thus subject to considerable risk of stress.

The country enjoys good solar conditions despite some seasonal variations (dry and rain seasons) with concentrated solar panel (CSP) energy potential of 3.2 TWh/year and solar photo-voltaic (PV) energy potential of 4.74 WTh/year. Contrariwise, wind conditions are moderate, below 4.0 m/s at 30 meters in the hinterland but slightly higher near the coast at 4.2 m/s with a potential moderate wind power of about 197 MW.

1.2.2 Land Resources

Some 56% of the country's total land mass or about 555,240 ha, are considered suitable for agriculture and are utilized for upland cereal and groundnut production as well as for grazing and fallow. This total arable land area comprises of 339,119 ha of upland and 216,121 ha of lowland ecologies. Of the lowland area of 216,121 ha, 81,120 is considered suitable for irrigation of which about 6% (less than five thousand hectares) has been put under irrigation during the past three decades.

Gambian soils are generally poor and have deteriorated over the past 20 years as a result of the declining natural forest cover and soil mining caused by a reduction in fallow periods and cropping of marginal lands. The heavy alluvial soils in the lowlands are moderately fertile but difficult to work manually and the higher lands are mostly continental or colluvial soils with sandy or sandy loam top layers and very low fertility.

1.2.3 Forest Resources

About 43% of the total land mass (425,000 ha.) is under natural vegetation cover in The Gambia. Of this total natural vegetation cover 302,000 ha are categorized as forest as at 2010.

Some of the main tree species of economic importance in both the energy and the construction sectors, are African mahogany (Khaya Senegalesis), Pterocarpus erinaceus, *Erythrophleum guanine*, *Terminalia* spp., *Borassus aethiopum, Elapids guineensis, Cordyla pinnata, prosopis Africana, and Daniella oliveri.*

There are also a large number of forest trees that produce valuable non-wood products of economic importance such as wild edible fruits, incense, medicines, etc. These include *Detarium Senegalese, Spondias mombin, Perkier biglobosa and Dialium guineense.* Most of these trees have also use as firewood.

1.2.4 Parks and Wildlife Resources

Despite an overall degradation of the environment and the change of land use in the last 20 years, The Gambia is still relatively rich in biological diversity. Major species of wildlife can be found and at least 111 mammal species, 554 bird species from 75 families, 67 reptiles and 30 amphibian species exist in The Gambia.

There are currently twenty-two wildlife protected areas (PA) occupying about 76,064 ha (7.27%) of the total surface area of the country, comprising eight national parks and reserves and fourteen ccommunity based conservation areas, all promoting in-situ conservation. The existing wildlife PAs coverage 7.27 percent of the total surface area of the country is still short of the 10 percent goal of total biodiversity area coverage by 2015 although potentials for more PAs exist.

1.2.5 Water Resources

The water resources of The Gambia consist of three forms. These are Seasonal rainfall, surface and underground water regimes. All of these water regimes vary both spatially and temporally in terms of quantity and quality.

Seasonal Rainfall Resources: Rainfall is the main source of water for arable ANR production in The Gambia. The country experiences a short rain season of about five months (June to October) every year. The rainfall distribution pattern and amount over three main locations of the country for the period 1994 to 2015 is presented in **Annex Table 1.3**. The average annual rainfall recorded at these three locations show an overall declining trend from about 1,050 mm in 1994 to 973 mm in 2015 with extreme intra-location annual variations.

Surface Water Resources: The Gambia possesses 118,000 ha of surface water resources as indicated in **Appendix 1.1.** The River Gambia is the main surface water resource making up about 96% of total surface water regime. Its estuarine nature subjects it to tidal influence, which is reflected along the entire length of the country, especially during the dry season. Thus it is subjected to saline intrusion and the 1g/1 saline front ranges between 80km and 250km upstream.

The freshwater flows which are related to rainfall, act as a driving force, pushing the saline limit towards the river mouth. During the dry season, the front moves upstream as the freshwater flow becomes less significant. Available records indicate a drop in the long-term mean annual discharge, hence the shift in upper limit of the saline front from 235km within the last 20 years. This phenomenon limits its utility for arable ANR production.

Underground Water Resources: The underground water resources comprise two major aquifers: the upper or shallow sand aquifer (at depths of 10m to 120m); and the deep sand stone aquifer (at depths of 250m – 450m).

Recharge of the shallow aquifer which is partly by rainfall and partly by lateral through flow is sensitive to rainfall. Generally, the water quality of this aquifer is good though pH levels 5-6 are said to be common and boreholes close to the saline surface water body could be subjected to saline intrusion especially if drilled to a depth of 100m or more. Less than 2% of the exploitable groundwater is being used for irrigation so far.

Source of recharge to the deep sandstone aquifer is through lateral flow from Senegal, which is estimated at 1.75m^3/year as at 1987. Good quality (drinkable) water is expected to be present only on the Eastern Part of the Country were the reservoir is estimated to hold 80,000 million m^3 out of an estimated total of about 650,000 million m^3. This aquifer is currently un-exploited in the Gambia though it is an important source of water in neighbouring Senegal.

1.2.6 Fisheries Resources

The Gambia is endowed with considerable riverine and marine fish resources. The country is located within the Eastern Central Atlantic Ocean, an area classified as one of the richest fishing zones of the world. The freshwater flows of the River Gambia enhance the marine fish resources with substantial nutrients that attract marine fish species for feeding and spawning purposes.

A 2004 study of fish resources in the River Gambia revealed that the brackish and estuarine portions of the river are very rich in terms of species diversity and abundance. The study identified about 70 fish species within the river system and several of them, especially those belonging to *Carangidae, Drepaneidae, Clupidae, Haemulidae, Polynemidae, Cichlidae, Scianidae, Cynoglossidae,* etc, are of commercial significance.

There are over 500 marine fish species which are broadly classed as demersals and pelagics. The demersals include groupers, sea breams, grunts, croakers and snappers etc. The small pelagics group consists of the two sardinellas (*Saridnella aurita* and *Sardinella maderensis),* horse mackerels (*Trachurus trecae, Trachurus trachurus* and *Caranx rhoncus*) and mackerel (*Scomber japonicues*).

The Maximum Sustainable Yield (MSY) of Gambian waters has been estimated at about 80,000 metric tonnes for pelagic and demersal species, while the current exploitation rate is between 35,000 to 40,000 metric tonnes. An overall assessment of the fishery resources suggests that high value demersal species are fully or excessively exploited, while the less valuable small pelagic stocks are understood to be under-exploited.

1.2.7 Rangeland and Livestock Resources

Given the unfavourable climatic conditions, the sustainable improvement of livestock production and productivity in The Gambian climatic environment and transhumance system will largely depend on the rational and mutual exploitation of natural resources across the three agro-ecological zones and vegetation cover of the country. About 40% or 371,200 ha of the total land area **(Appendix 1.1)** are regarded as rangeland.

Rangeland Resources: Of the estimated 371,200 ha regarded as rangeland about 222,750 ha are used for pasture under transhumance system. Only 5,000 ha of this pasture are classified as improved pasture as at 2010. Thus, the scope for production and productivity of the rangeland resources is huge.

Livestock Resources: Recent estimates (2011) put the national herd at about 398,472 cattle, 143,982 sheep, 302,878 goats, 6,385 pigs, 16,902 horses, 55,527 donkeys and 1,870,376 poultry. The livestock density of over 42 units/ha is one of the highest in sub-Saharan Africa. Productivity is low due to

extensive livestock management systems. Total meat production was 8,909 tonnes in 2011, and milk production was 4,288 tonnes.

1.2.8 The Sate of the Environment

The foregoing review of the major environmental resources of the country reveals ample opportunities for enhancement of the production and productivity of the ANR sector to improve its contribution to the growth and development of the economy. However, it also masked serious underlying environmental problems and processes which are threatening the long-term productive potentials of the sector.

The overall effects of these problems and processes can be summed up as rising environmental degradation from a combination of factors including: inappropriate land use practices; overgrazing of pasturelands; deforestation due to over-felling of trees and frequent bush fires; increased sedimentation and salinity in the lowlands; erosion in the uplands and along the coastline and, climate change caused by anthropogenic emissions of 'green house gases' such as CO_2, CH_4, CO, SO_2, CO_X etc, has a domino effect on all these negative environmental parameters by exacerbating their occurrence, magnitude and frequencies.

1.3 SECTORAL PERFORMANCE SINCE 1994

1.3.1 Pre-2009 – 2015 ANR Policy

Following the shocks of the 22nd July 1994 military take-over, the economy made a quick recovery from a negative growth rate to a stagnant nominal positive growth rate of about 5% per annum since 1996. The ANR sector surpassed the manufacturing sector in terms of macroeconomic parameters indicating absence of any form of transformation and development of the economy and reaffirming the primacy of ANR sector in The Gambian economy. In contrast to the sluggish long-term growth rate of the economy, the ANR sector's share of the gross domestic product (GDP) depicts a long-term increasing rate of about 24% in 1995 to about 28% in 2000 and a slight dip to 26% in 2008 compared with manufacturing share, respectively of 7%, 6% and 6% as evident from **Table 1.1.** The sector maintained a value-added growth rate of about 6.75% on average per annum. The constituent sub-sectors of crop, livestock, forestry & wildlife and fisheries registered a value-added growth rate of 6.17%, 4.63%, 3.40% and 5.83% respectively. The sum total ANR value-added growth rate was doubled that of manufacturing sector, all of which were more than the population growth rate of 2.77.

Table 1.1: Trends in Relative ANR/Manufacturing Shares of GDP in the Period 1995/2008 (D'000 at 2004 constant Prices)

Description	1995	2000	2008	Growth Rate %		
				1996-2000	2001-2008	1996-2008
Total GDP	**10,873,169**	**13,662,239**	**19,077,743**	**5.13**	**4.95**	**5.80**
ANR	**2,568,085**	**3,821,429**	**4,821,079**	**9.76**	**3.27**	**6.75**
Crops	1,455,887	2,452,930	2,624,001	13.70	0.87	6.17
Livestock	1,061,305	1,278,569	1,700,286	4.09	4.12	4.63
Forestry	75,209	91,898	108,458	4.44	2.25	3.40
Fishing	228,461	291,084	388,335	5.48	4.17	5.83
ANR share of GDP (%)	**23.62**	**27.97**	**26.49**	**1.90**	**0.66**	**1.16**
Manufacturing	**782,079**	**847,823**	**1,135,066**	**1.68**	**4.24**	**3.47**
Man. share of GDP (%)	**7.19**	**6.21**	**5.95**	**0.33**	**0.86**	**0.60**

Source: Central Statistic figures

The main source of ANR output increase has been crop production with only maize and sorghum registering a growth rate of about 10% and 8% respectively between 1995 and 2008 whereas the main cash crop groundnut registered a negative annual growth rate of 0.78% **(Annex Table 1.1a)**. The overall development of the ANR sector was beset with problems both at macro and micro levels.

At the macro level, monetary and exchange rate policies were more favourable for growth of other sectors especially redistributive trade than for the ANR sector. The analysis of the relative shares of the ANR sector and redistributive trade in annual total commercial bank loans and advances during the period 1994/2008 is presented in **Annex Table 1.2**. The share of agriculture varied erratically between a low of 5.00% in 2001 and a high of 19.43% in 2006. The corresponding share of redistributive trade varied between a low of 21.77% in 2006 and a high of 47.88% in 1999.

At the micro level, the impact of erratic rainfall pattern continued to be exacerbated by the same major problems of the 1995/2008 era including shortage of labour saving-devices, lack of yield enhancing inputs especially fertilizer, farm labour shortage and lack of incentive markets and marketing arrangements. **Annex Tables 1.3 and 1.4** present respectively the rainfall pattern and the imports of fertilizer for the period 1994/2008. The average total annual rainfall declined by an annual rate of 1.6% between a high of 1,596.8mm in 2000 and a low of 603.8mm in 2002 whilst its annual spatial distribution over the country varied between a low -4.1% in Yundum and a high of -0.8% in Basse. Similarly, total annual fertilizer imports for the period varied between a low of 1,013 tonnes in 1997 and a high of 7,033 tons in 2003 with an average annual actual national requirement of 48,304 tonnes. Annual percentage changes in fertilizer imports during the period varied between a low of -54.17% in 1995 and a high of 295.47% in 1999 reflecting an overall total annual average change rate of 3.27% and individual fertilizer type average annual change rate of 1.39% single supers (SSP), 28.57% for compound (NPK) and 0.79% for urea. Thus availability of fertilizer has not been only most inadequate but also most erratic and disproportionate.

1.3.2 2009 – 2015 ANR Policy Era

Table 1.2: Trends in Relative ANR/Manufacturing Share of GDP in the period 2009/2015 (D'000 at 2004 constant Prices)

Description	2008	2010	2015*	Growth Rate %		
				2009-2010	2011-2015	2009-2015
Total GDP	**20,292,397**	**21,633,235**	**24,251,196**	**3.30**	**4.29**	**3.24**
ANR	**4,855,727**	**5,989,273**	**4, 710,241**	**11.67**	**0.94**	**-2.09**
Crops	2,624,001	3,775,651	2,042,145	21.94	-2.29	-6.24
Livestock	1,734,933	1,702,441	2,041,956	-0.94	4.01	4.32
Forestry	108,458	111,828	130,775	1.55	3.26	18.75
Fishing	388,335	399,353	495,366	1.42	4.84	4.37
ANR share of GDP (%)	**23.93**	**27.69**	**19.42**	**3.54**	**0.22**	**-0.64**
Manufacturing	**1,135,066**	**1,091,188**	**1,251,156**	**-1.93**	**2.93**	**1.46**
Man. Share of GDP (%)	**5.59**	**5.04**	**5.16**	**-0.58**	**0.68**	**0.45**

Source: Central Statistic figures. *Estimates

The ANR sector continued to surpass the manufacturing sector in terms of macroeconomic parameters indicating a continuation of the structural status quo of the economy as in the 1996/2008 period which reasserted the primacy of ANR sector. However, in contrast to a further sluggish long-term growth rate of the economy, the ANR sector's share of the GDP depicts a haphazard medium-term increasing rate of about 28% in 2010 from about 24% in 2008 but dipping down to 19% in 2015 whereas the share of

manufacturing oscillated around 5% as depicted in **Table 1.2.** The sector manifested a negative medium-term value-added growth rate of about 2.1% on average per annum compared to manufacturing's positive value-added growth rate of about 1.46% per annum. The constituent sub-sectors of crop, livestock, forestry & wildlife and fisheries registered a value-added growth rate of -6.24%, 4.32%, 18.75% and 4.37% respectively. The total ANR value-added growth rate was dismally less than both manufacturing value-added growth rate of 1.46 and the population growth rate of 3 .30%.

The main source of ANR output decrease has been crop production with groundnut, early millet and late millet registering negative growth rates of 3.43%, 6.43% and 6.14% respectively, between 2009 and 2015 **(Annex Table 1.1b)** in spite of the huge investment efforts in implementing the GNAIP as evident from **Appendix 1.2**. The overall development of the ANR sector continued to be beset with problems both at macro and micro levels.

At the macro level, the persistent monetary and exchange rate policy slippages were less unfavourable for the growth of other sectors especially redistributive trade than for ANR. **Annex Table 1.2** presents the analysis of the relative shares of the ANR sector and redistributive trade in annual total commercial bank loans and advances during the period 2009/2015. The share of agriculture varied erratically from a low of 1.15% in 2014 to a high of 5.84% in 2009. The corresponding share of redistributive trade varied between a high of 39.48% in 2015 and a low of 26.02% in 2011.

Table 1.3: Medium-Term ANR Sector Policy Objectives and Strategies: Commodity Output Forecast and Performance 1994/2005

Major Commodities	**Unit**	**Actual 1994**	**Med.-Term ANR/PO&S Forecast 2005**		**Actual 2005**		**Performance (%)**	
Land in Use	Total in Ha	181,122	406,000		338,663		-16.59	
	Rainfed in Ha	175,690	386,000		325,141		-15.77	
	Irrigated in Ha	1,680	17,000		2,050		-87.94	
	Wetland ha	572	3,000					
	Upland rice (additional)	3,180	800		11,472		936.5	
Crops: (in MT)	Actual 1994		Production	Yield	Yield.	Production	Production.	Yield
	Yield	Production						
Rice	1.615	20,372	89,000	2.2	1.055	18,000	-79.78	-52.05
Millet	1.102	52,840	90,000	1.4	.993	125,391	39.32	-28.64
Maize	1.262	13,310	34,000	1.6	1.005	27,703	-18.52	-37.19
Sorghum	0.849	8,900	17,000	1.0	1.240	28,463	67.42	24.00
Groundnuts	1.251	80,800	126,000	1.2	1.013	140,660	11.63	-15.58
Vegetable (Exp)	106 ha							
LIVESTOCK			Incremental					
Cattle	Animals	305,852	72,000		276,764		-140.4	
Sheep & goats	Animals	370,000	155,000		524,950		-0.03	
Poultry	Animals	740,000	1,950,000		652,417		-104.49	
Pigs	Animal	14,000	18,000		14,032		-99.8	
Milk Products	Metric tonnes		10,000					

At the micro level, the impact of erratic rainfall pattern was exacerbated by major problems including shortage of labour saving-devices, lack of yield enhancing inputs especially fertilizer, farm labour shortage and lack of incentive markets and marketing arrangements. **Annex Tables 1.3 and 1.4** present respectively the rainfall pattern and the imports of fertilizer for the period 2009/2015. The average total annual rainfall declined by an annual rate of 1.45% from a high of 1,066 mm in 2010 to a low of 504.7 mm in 2011 whilst its annual spatial distribution over the country ranged from a low of -3.39% in

Janjangburey to a high of 4.34% in Yundum. Similarly, total annual fertilizer imports in metric tonnes for the period varied from a low of 4,327 tonnes in 2014 to a high of 7,250 in 2010 against an average annual actual national requirement of 48,304 tons. Annual percentage changes in fertilizer imports during the period ranged from a low of -36.50% in 2011 to a high of 57.14% in 2009 showing an overall total annual average declining rate of 2.29% and an individual fertilizer type average annual declining rate of 4.17% SSP, 9.25% for NPK and 2.77% for urea. Thus availability of fertilizer has not been only most inadequate but also erratic and disproportionate in type.

1.4 PRODUCTION TRENDS – 1995/2015

1.4.1 Pre-2009 – 2015 ANR Policy

The strategy for National Agricultural Development Horizon 2010 adopted by government in November 1996 established physical targets for land-use, crops, livestock and fisheries and an annual resources requirement of about US$8 million for the period 1997/2010. The Medium-Term ANR Policy Objectives and Strategies adopted the targets and goals for land use, crops and livestock for 2005. The annual resource requirement of US$8 million excluded institutional capacity building, farm road construction and administrative support services.

The commodity output targets, goals and performance of the Medium-Term ANR Sector Policy Objectives and Strategies – 1999/2002 for a 5-year planning horizon to 2005 using 1994 as the base year are summarized in **Table 1.3**. Unfortunately the comparable information on fisheries, forestry & wildlife and water resources has not been provided by the policy.

The following summarizes a comparative analysis of the land use, crop production and productivity and livestock population incremental growth targets and goals with actual performance as at 2005:

i. a general decline in land use compared with the medium term targets by 16.59% for total cultivated area, 15.77% for rainfed area and 87.94% for the irrigated area. Only in upland rice {registering more than 9 fold increase (936.5%)} was the expected increase realized;
ii. a mixed performance for crop production but a significant decline for productivity with generally negative yield performances. Rice and maize production declined by 79.78% and 18.52% respectively while sorghum, millet and groundnut production increased by 67.42%, 39.32% and 11.63% respectively. Yield levels comparatively declined for all crops with rice, maize, millet and groundnuts declining by 52.05%, 37.19%, 28.64% and 15.58% respectively, and only for sorghum did yields increased by 24%; and,
iii. a significant decrease in the incremental livestock population for all species with cattle, poultry and pig populations declined by 140.41%, 104.49%, 99.8% respectively and a slight decline for small ruminants (sheep and goats) at 0.03% from their medium-term targets.

The national food production and imports implications of the foregoing analysis of the programme performance can be summarized as follows:

National Cereal Balance Sheet for the period 1994/2004 (**Annex Table 1.4**) registered the highest deficit of about 24,600 metric tonnes in 1998 and the highest surplus of about 45,500 tonnes in 2003 with an overall deteriorating tendency despite sizeable improvements in net grain production of about 4.41% average annual total grain production growth rate for the period 1994/95 – 2007/08 crop seasons

(Annex Table 1.1a). The average annual population growth rates of individual livestock species ranged from a low of -3.0% for poultry to a high of 11.22% for pigs while cattle, sheep and goats manifested average annual growth rates of 1.76%, 0.67% and 0.60% respectively **(Annex Table 1.6)**. The total annual national fish catch grew by an average annual rate of 7.60% comprising of 6.36% industrial and 18.83% of artisanal **(Annex Table 1.7a)** with average annual declining rates of 7.53% in the biomass and 0.76% in fish exports. Although the total average annual fish catch is some 39% less than the biomass, the average annual declining rate of the latter suggests urgent efforts to develop the aquaculture potentials and protect spawning grounds of the country.

Food Imports: Imports of selected food commodities from 1994 to 2002 and CIF value of imported livestock and fish products from 1995 to 2004 are respectively presented in **Annex tables 8a & 8b**. Looking at just those commodities which were potential candidates for import substitution, their imports have generally shown mixed trends as detailed hereunder:

i. Rice imports fluctuated between a low of 21,027 tonnes in 1995 and a high of 96,924 tonnes in 1998 reflecting a negative average annual growth rate of 0.5% and a corresponding annual average CIF value growth rate of 25.02% (**Annex Table 1.8a**) ;
ii. Vegetable Cooking oil imports fluctuated between a low of 4,795 tonnes in 1994 and a high of 18,363 tonnes in 1998 reflecting an average annual growth rate of about 33.94% with a corresponding average annual CIF value growth rate of 21.12% (**Annex Table 1.8a**);
iii. Fruits/vegetables imports fluctuated between a low of 6,269 tonnes in 1995 and a high of 23,155 tonnes in 2000 exhibiting an average annual growth rate of 16.96% and a negative average annual growth rate of 5.59% **(Annex Table 1.8a);**
iv. Tomato paste imports rose from a low of 3,099 tonnes in 1994 to a high of 53,348 tonnes in 2002 reflecting an average annual growth rate of 202% and a corresponding average annual CIF value growth rate of 48% **(Annex Table 1.8a);**
v. Onions imports fluctuated between a low of 1,358 tonnes in 1995 and a high of 24,900 tonnes in 1994 exhibiting a negative average annual growth rate of 11.38% with a corresponding negative average annual growth rate of 10% **(Annex Table 1.8a);**
vi. Beef imports fluctuated between a low of D57,000 in 1998 and a high of D6.114 million in 2004 at an average annual growth rate of 281.7% and mutton imports fluctuated between a low of D1,000 in 1996 and a high of D1.784 million in 1999 reflecting an average annual growth rate of 21.39% (**Annex Table 1.8b**);
vii. Poultry Meat imports fluctuated between a low of D1.971 million in 1997 and a high of D16.0991 million in 2002 reflecting an average annual growth rate of 43.82% (**Annex Table 1.8b**);
viii. Imports of milk fluctuated between a low of D12.903 million in 2004 and a high of about D83.996 million in 2003 reflecting a negative average annual growth rate of 6.74 (**Annex Table 1.8b**); and,
ix. Fish imports, for only four years (1995-1998), declined from a high of D2.070 million in 1995 to a low of D1.44 million in 1997 with a negative average annual growth rate of 13.16% (**Annex Table1.8b**).

Except fruits/vegetables, onions, milk and fish which showed a declining import rates during the period under review, the imports of all other commodities exhibited increasing trends. Although the planned annual resource requirement of US$8 million for the period was never realized as evident from **Annex Table 1.10**, this is not a sufficient reason for the foregoing alarming import trends of commodities some of which, like onions, were locally produced by women in surplus quantities for export as far back as the mid-70s whereas mango planting materials were exported to Egypt and Ghana in the late-90s by private operators to become strong world exporters of mangos to-day. The relative share of ANR in the Development Budget for the period 1994/2005 was never more than 50% of the US$8 million annual

investment target of Horizon 2010 except in 2002 and 2004. Therefore, the increasing import trends in commodities which were/are potential candidates for import substitution allude to a deep seated structural disruption in the horticultural sub-sector such as the disintegration of the Association of Horticultural Producers and Exporters of The Gambia (GAMHOPE). Thus, any viable efforts to revitalize the industry must be based on a strong policy commitment to facilitate greater involvement of the private sector, including women, in the ANR sector to achieve the required levels of intensification and expansion of production.

Table 1.4: Gambia National Agricultural Investment Plan (GNAIP) Policy Objectives and Strategies: Commodity Output forecast and Performance

PROGRAMME 1							
Component	**GNAIP Target**			**Achieved at 2015**			
	Area Ha / Number	**Yield MT**	**Activity/Crop**	**Area**		**Yield**	
				Ha	**%**	**Tons**	**%**
Lowland Development for Rice Production	**Water Retention & Land Improvement for Rice Prod.**						
	5,000		Run-off Inundated Flood Plains Improved	17,653	98.07		
	3,000		Back Swamps Improved				
	10,000		Natural Depression Improved				
	Pump & Tidal Irrigation for Rice Production						
	500		land developed & equipped with pump				
	2,000		Tidal irrigation schemes developed	1,200	60		
	Improvement of Seasonally Saline Tidal Swamps for Rice Production						
	3,500		Access/Waterway Improved				
	Foundation Seed Production						
	3	Ecology	Improved Foundation seed available				
Irrigation for Horticulture & Uplands Crops	**Cluster Africa Market Gardens**						
	80		developed as 32 commercial farms				
	80		developed for 320 Young farmers				
	80		developed for 620 women farmers				
	30		developed as model farms within 6 Agricultural Regions				
	Community Village Gardens						
	100		developed for 400 Young farmers				
	100		developed for 800 women				
	30		developed as model farms within 6 Agricultural Regions				
	Small-Scale Village Gardens						
	100		developed for 400 Young farmers				
	100		developed for 800 women				
	30		developed as model farms within 6 Agricultural Regions				
	Small-Scale Surface Irrigation Gardens						
	80		developed as 32commercial farms				
	80		developed as 320 Young farms				
	80		developed as 640 women farmers				
	30		developed as model farms in 6 Agricu. Regions				
Major Crops	90,000	1.40	Millet	111,457	124	0.93265	67
	50,000	1.60	Maize	38,520	84	0.92008	58
	16,000	1.00	Sorghum	30,000	188	0.89493	89
	156,000		**Total Coarse Grain**	**183,371**	**118**	**0.91589**	**64**
	70,000	2.50	Upland Rice	60,000	86	0.84798	34
	24,000	2.92	Swamp Rice	19.003	79	0.93933	32
	94,000	**2.88**	**PADDY**	**79,265**	**84**	**0.89365**	**31**
	250,000	**1.58**	**CEREAL**	**202,374**	**81**	**0.90636**	**57**
	100,000	1.20	Groundnuts	106,157	106	0.81479	68
	350,000	**1.68**	**NATIONAL TOTAL**	**308,531**	**88**	**0.89618**	**53**

1.4.2 2009 – 2015 ANR Policy Era

Aligned with the stated policy objectives and strategies of the 2009 – 2015 ANR policy, the GNAIP focused on six programme areas: improvement of agricultural land and water management; improved management of other shared resources; development of agriculture chains and market promotion; national food and nutrition security; sustainable farm management; and, GNAIP coordination, monitoring and evaluation. It established quantitative and qualitative output targets as applicable, for all sub-component activities per component of each of these six programmes **(Appendix 1.4)** for a total investment cost of US$296.7 million for the 2011/2015 planning horizon during which period the Government budgetary allocation to the sector was expected to be 10% of the national budget by 2015.

The quantitative commodity output targets, goals and performance of the GNAIP are presented herein as **Table 1.4**. The following summarizes a comparative analysis of the land use for crop and horticultural production in terms of targets and actual performance as at 2015:

i. Of a total target of 18,000 ha under the sub-component ''water retention and land improvement for rice production'' of the ''lowland development for rice production'' component, 98.07% of this target was achieved;
ii. Of a total target of 2,500 ha under the sub-component ''pump and tidal irrigation for rice production'' of the ''lowland development for rice production'' component 607% was achieved; and,
iii. Of the targets for the major crops the following area and yield percentages per class of crop were achieved:
    - Total Coarse Grain (millet, maize and sorghum) 118% and 64% respectively;
    - Total Paddy (upland and swamp rice) 84% and 31% respectively;
    - Total Cereal (Total Coarse Grain and Total Paddy) 81% and 57% respectively;
    - Groundnuts 106% and 68% respectively; and,
    - Total National Production 88% and 53% respectively.

National Food Production: In the absence of a comparable National Cereal Balance Sheet for the period under review, the overall national performance of the three major sources of domestically produced food provide a good index of the state of national food production for the period2008/09 to 2014/15. These are crops, livestock and fisheries. The overall national trends in the production of these three main food sub-sectors over the period under review can be summarized as follows:

i. National cereal production being the main food crop (**Annex Table 1.1b**) fluctuated between a low of 180,800 metric tonnes in 2008/09 and a high of 239,400 metric tonnes in 2012/13 providing about 50% of national food grain requirement. The average annual growth rates of the contribution of individual cereal crops fluctuated between a low of -6.97% for early millet and a high of 6.08% for rice with a total cereal average annual growth rate of -4.51%;
ii. The evolution of the livestock population which constitutes the main source of domestically produced animal protein is depicted in **Annex Table 1.6** for the period 2008/09 to 2011**. T**he growth rates of individual species fluctuated between a low of -22.68% for pigs and a high of 49.79% for poultry while cattle, sheep and goats manifested average annual growth rates of -1.86%, -8.98% and -6.12% respectively; and,

iii. The production of fish which is the main source of animal proteins for the majority of poor households is presented in **Annex Table 1.7b** for the period 2006/2012 disaggregated by fish landing sites per zone – Atlantic and Inland Zones. The total annual Atlantic Zone catches fluctuated between a low of about 24,875.58 tonnes in 2011 and a high of about 36,639.98 tonnes in 2009 at an average annual declining rate of 0.04% whereas the total annual Inland Zone catches fluctuated between a low of 5,333.66 tonnes in 2011 and a high of about 9,432.14 tonnes in 2007 at an average annual declining rate of 0.06% some 0.02% faster than the former zone. The overall total annual fish catches declined at an average annual rate of about 4.52%, confirming the conclusions of the analysis of 1994/2004 period for urgent efforts to develop the aquaculture potentials and protect spawning grounds of the country.

Food Imports: Annex tables 9a, 9b & 9c present respectively imports of rice for the period 2005/2014, selected food commodities for the period 2000/2015 and livestock/fisheries products for the period 2000/2015. Looking at just commodities which are also grown domestically, imports have generally shown mixed trends as was the case in the pre-2009/2015 ANR policy period detailed hereunder:

i. Total rice imports fluctuated between a low of 35,553 tonnes in 2006 and a high of 140,672 tonnes in 2012 reflecting an average annual growth rate of 10.91% and a corresponding annual average CIF value growth rate of 19.88% (**Annex Table 1.9a**) ;
ii. Vegetable Cooking oil imports fluctuated between a low of 11,890 tonnes in 2000 and a high of 55,781 tonnes in 2014 at an average annual growth rate of about 15.95% with a corresponding average annual CIF value growth rate of 84.90% (**Annex Table 1.9b**);
iii. Edible vegetables & certain roots & tubers imports fluctuated between a low of 12,162 tonnes in 2013 and a high of 95,023 tonnes in 2001 at an average annual declining rate of 1.92% and an average annual CIF value growth rate of 22.28% **(Annex Table 1.9b);**
iv. Edible vegetables & nuts; peel of citrus fruits or melon imports fluctuated between a low of 196 tonnes in 2008 and a high of 1,894 tonnes in 2015 at an average annual growth rate of 11.90% and a corresponding average annual CIF value growth rate of 34.72% **(Annex Table 1.9b);**
v. Tomatoes, preserved otherwise than by vinegar or acetic acid imports fluctuated between a low of 4,190 tonnes in 2001 and a high of 30,891 tonnes in 2009 at an average annual growth rate of 5.90% and a corresponding average annual CIF value growth rate of 16.77% **(Annex Table 1.9b)**;
vi. Onions and shallots imports fluctuated between a low of 2,106 tonnes in 2002 and a high of 85,531 tonnes in 2001 exhibiting a declining average annual rate of 0.41% with a corresponding average annual CIF value growth rate of 64.45% **(Annex Table 1.9b);**
vii. Meat and edible meat offal imports fluctuated between a low of 1,835 tonnes in 2000 and a high of 13,205 tonnes in 2015 at an average annual growth rate of 41.31% with a corresponding average annual CIF value growth rate of 98.23% **(Annex Table 1.9c);**
viii. Fish and crustaceans, molluscs and other aquatic invertebrates imports fluctuated between a low of 102 tonnes in 2012 and a high of 570 tonnes in 2000 at an average annual declining rate of 5.13% with a corresponding average annual CIF value declining rate of 11.04% **(Annex Table 1.9c);**
ix. Poultry imports fluctuated between a low of zero tonnes in 2006 and 2008 and a high of 108 tonnes in 2001 reflecting an average annual growth rate of 6.67% with a corresponding average annual CIF value growth rate of 61.52% **(Annex Table 1.9c);** and,
x. Milk and milk products Imports fluctuated between a low of 5,999 tonnes in 2001 and a high of 26,287 tonnes in 2000 reflecting an average annual declining rate of 0.90 with a corresponding average annual CIF value growth rate of 35.99% **(Annex Table 1.9c).**

The expectation that Government budgetary allocation to ANR sector would be increased to at least 10% of the national budget in 2012 to 2015 in line with the Maputo Declaration did not materialize as observable from **Annex Table 10.** The relative share of ANR in the Development Budget for the period 2009/2015 averaged about 3.31% per annum. However, substantial resources accrued from other expected financing sources outside the government to directly support GNAIP as evident from **Appendix 1.3**. These resources effected sizeable reduction in the planned financing gap of USD201 million as at 2009.

Except rice, milk and fish imports which showed an increasing trend, overall the imports of commodities which are also grown domestically have generally shown visible decline in their average annual growth rates during the period under review from those of the pre-2009/2015 ANR policy period**.** The average annual rate of import of rice increased from a declining rate of 0.50% to a positive growth rate of 10.91% reflecting an increase in the average annual demand growth of 11.41%. The declining average annual import rates of milk and fish of 6.74% and 13.16% respectively during the pre-2009/2015 ANR policy period decreased to declining rates of 0.9% and 5.13% respectively during the 2009/2015 period reflecting import demand growth of 5.84% for milk and 8.03% for fish.

While the overall slowing down of demand of most of the imported commodities which are also grown domestically may be attributed to the positive impact of the 2009/2015 ANR policy its GNAIP implementing instrument, the persistent increasing demand for rice, milk and fish imports underscores a need for intensified import substitution policy efforts across the ANR production spectrum.

1.5 PRODUCTIVITY TRENDS – 1995/2015

1.5.1 Pre-2009 – 2015 ANR Policy

A comparative analysis of value-added per worker and employment in ANR and manufacturing sectors is presented in **Table 1.5**. The ANR sector maintained a labour productivity growth of 3.64% in the period 2001/2005 per annum, compared to 9.62% in the period 1996/2000 bringing the decades (1996-2005) growth rates to 6.63% per annum a fairly significant growth rate in relation to the whole economy (0.01%) but substantially lower than that of manufacturing of 14.56%. Although livestock and fisheries sub-sectors were important factors contributing to high productivity level in the ANR sector, the major part of the increase in overall sector labour productivity is attributed to rising productivity of the crop production sub-sector.

There is evidence of decreasing disparity of worker productivity between agriculture and the manufacturing sectors (and the implied income differences) in the period 1995/2005. In 1995, the ratio was 0.004 and this increased to 0.30 in 2005. This appears to be related to decreasing manufacturing labour productivity rather than improved rainfall patterns and/or improved major available technological options and productivity gains such as farm mechanization and fertilizer use.

Whilst increases in labour productivity are important for increases in output, land productivity is also important and needs to be given similar emphases in view of its diminishing supply as evident from analysis of land-use targets in **Table 1.3**. Also, except sorghum which registered a significant yield improvement of 24% over its target for 2005, all the other crops of rice, millet, maize and groundnuts even registered a decline over their 1994 base yields. Emphasis on intensification of land use through in-situ development which includes increasing cultivated area through relay cropping of vegetables, mixed

Table 1.5: ANR and Manufacturing: Value-Added Per Worker and Employment (GDP at Constant 2004 prices)

Description	1995	2000	2005	2010	2015*	2020	2026	Growth Rate (%)							
								1996/2000	2001/2005	2006/2010	2010/2015	2016/2020	2015/2026	2011/2026	1996/2026
ANR VA (million 'D)	**2,568**	**3,821**	4,561	**5.989**	**4,710**	5,954	7,889	11.84	3.87	6.26	-4.27	5.28	6.14	1.98	6.68
Total Employment in ANR	574,749*	648,564*	655,050	707,088**	745,508	783,537	831,741	2.69	0.20	4.69	1.09	0.46	1.05	1.10	1.44
ANR VA./Worker (D)	4,469	5,891	6,963	8,341	6,318	7,599	9,485	9.62	3.64	3.96	-4.85	4.06	4.56	0.86	3.62
ANR VA/Worker															
Total GDP/Worker	0.24	0.31	0.38	0.38	0.27	0.27	0.26	5.83	4.52	0.00	-5.79	0.00	-0.34	-1.97	0.27
Manufacturing VA (million 'D)	795	848	1,144	1,091	1,251	1,443	1,714	1.33	6.98	-0.93	2.93	3.07	3.36	3.57	3.73
Total employment in Manufacturing	799	18,015	48,736	109,127**	196,172	352,646	712,826	431.00	34.11	24.78	159.32	13.29	23.94	34.58	2,874.67
Manufacturing VA/Worker (D)	994,994	47,072	23,473	9,998	6,378	4,092	2,404	19.1	10.02	11.5	-7.24	12.5	12.5	15.19	3.32
Manufacturing VA/ Worker	54.30	2.44	1.28	0.46	0.28	0.14	0.07	-19.10	-9.51	12.81	-7.83	-8.33	-6.82	-5.30	-3.22
Total GDP/Worker															
Total GDP (million'D)	10,873	12,977	17,217	21,635	24,251	31,695	43,702	3.88	6.53	5.13	2.42	6.14	7.29	6.37	9.74
Total Employment	593,335	673,133	940,921	988916	1052854	1,123,091	1,213,588	2.69	7.02	25.84	13.06	1.11	1.89	1.42	3.37
Total GDP/worker (D)	18,325	19,279	18,298	21,877	23,034	28,221	36,o19	1.04	-1.02	3.91	1.06	4.50	5.12	4.04	3.11
ANR VA/Worker (D)															
Manufacturing VA/worker (D)	0.004	0.13	0.30	0.83	1.00	1.86	3.95	630	26.15	35.33	8.95	17.20	34.17	23.49	3,182.26

Source: GBOS figures
*Agricultural Sample Survey
**GBOS 2010 IHS

farming of crops and livestock, cultivation of value-added crops such as flower and intercropping of vegetables and fruits has been virtually absent or very low at best. Substantial opportunities for expanding NERICA upland rice exist.

1.5.2 2009 – 2015 ANR Policy Era

A comparative analysis of value-added per worker and employment in ANR and manufacturing sectors is presented in **Table 1.5**. The ANR sector maintained a labour productivity growth of -4.85% in the period 2010/2015 per annum, compared to 3.96% in the period 2006/2010 bringing the decades (2006-2015) growth rate to -0.45% per annum, an extremely poor growth rate in relation to the whole economy (2.49%) and that of manufacturing of (2.13%). Although livestock and fisheries sub-sectors are important factors contributing to high productivity level in the ANR sector, the major part of the decrease in overall sector labour productivity is attributed to declining productivity of the crop production sub-sector.

Albeit not strong, there is evidence of increasing disparity of worker productivity between ANR and the manufacturing sectors (and the implied income differences) in the period 2010/2015. In 2010, the ratio was 0.83 and this increased to 1.00 in 2015. This appears to be related to improved rainfall patterns rather than major available technological options and productivity gains such as farm mechanization and fertilizer use.

Thus, as observed in sub-section 1.5.1 above, increases in labour productivity are important for increases in output, but land productivity is also important and needs to be given similar emphases in view of its diminishing supply as evident from analysis of land-use targets in **Table 1.4**. Again, except sorghum which registered a relatively less significant yield declined of 11% over its target for 2015, all the other crops of rice, millet, maize and groundnuts registered a highly substantial decline of 33% or more from their 2015 target yields. This reaffirms the need for emphasis on intensification of land use through in-situ development including increasing cultivated area through relay cropping of vegetables, mixed farming of crops and livestock, cultivation of value-added crops such as flower and intercropping of vegetables and fruits have been virtually absent or very low at best. Substantial opportunities for expanding NERICA upland rice exist.

1.6 AGRO-BASED INDUSTRIES DEVELOPMENT – 1995/2015

1.6.1 Pre-2009 – 2015 ANR Policy

The growth and development of agro-based industries was not explicitly emphasized in the 1994-2005 agricultural policy stance despite their potentials in the creation of off-farm jobs, expanding raw materials outlets and adding value to such produce and, the provision of overall stimulus to growth through further inter-sectoral integration. A new and strong emphasis in the development efforts on industrial development will be placed on the 2017-2027- ANR Policy

The trends in the development of the agro-based industries for the period 1994/2008 are presented in **Table 1.6**. Structurally the sub-sector comprises fish, rice, saw milling, abattoir, vegetable processing, groundnut milling private ice making, community ice making and

Table 1.6: Development of Sub-sectoral Agro-based Industries in the Period 1994 – 2008

Sub-sector	Year															Av. annual % change
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
Fish Processing Establish.	5	8	8	8	8	8	8	8	8	8	8	8	8	8	6	1.43
Rice Processing Establish. (Pub.)	0	0	1	1	1	1	1	1	1	2	2	2	1	1	1	0.00
Saw Milling Establishments	12	13	14	16	54	62	82	82	82	82	82	83	83	83	83	42.26
Abattoir Establishments	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	7.14
Vegetable Processing Establish.	0	0	0	0	0	0	0	0	0	1	1	2	2	2	1	0.00
Groundnut Milling Establish.	1	1	1	1	1	1	1	1	1	2	2	2	1	1	1	0.00
Private Ice Plants													3	3	5	33.33
Community Ice Plants													4	4	4	0.00
Vegetable Production & Export Establish.	18	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-6.35

Table 1.7: Development of Sub-sectoral Agro-based Industries in the Period 2009 – 2015

Sub-sector	Year							Av. annual % change
	2009	2010	2011	2012	2013	2014	2015	
Fish Processing Establishments	6	6	6	6	6	5	5	-2.78
Rice Processing establishments (Public)	1	1	1	1	1	1	1	0.00
Saw Milling Establishments	83	44	44	44	44	54	54	-5.82
Abattoir Establishments	2	2	2	2	2	2	2	0.00
Vegetable Processing Establishments	1	1	1	4	4	4	6	83.33
Groundnut Milling Establishments	1	1	1	1	1	1	1	0.00
Private Ice Plants	5	5	6	7	8	11	12	23.33
Community Ice Plants	3	3	3	3	2	1	1	-11.11
Public Fish Markets	0	1	1	1	2	2	2	16.67
Vegetable Production & Export Establishments	2	2	2	2	2	2	2	0.00
Fish Meal Plants	0	0	0	0	0	0	1	16.67
Cashew Processing Establishments			1	4	4	5	5	100

vegetable production and export. The sub-sector has shown a slight expansion since 1994 as evident from the average percentage growth of establishments.

The following summarizes the development of the enterprises during the period under review:

i. Fish processing establishments fluctuated from a low of 5 in1994 to high of 8 right through from 8 in 1995 to 2007 dipped down to 6 in 2008 manifesting an insignificant average annual growth rate of about 1.43% over the period;
ii. Rice processing establishments of commercial scale grew by a zero percent average annual growth rate which emphasizes the need for the proliferation of subsistence type individual and community small-scale processing machines to march up the policy emphasis for expanded rice production to achieve the self-sufficiency drive;
iii. The number of saw milling establishments grew by an average annual growth rate of about 42.20% which, despite remarkable expansion of community forest establishment as observable from **Annex Table1.11**, detracts from the urgency of concerted policy actions for reafforestation and agro-forestry since the bulk of the observed growth rate is driven by log imports from the Casamance region of Senegal;
iv. Abattoir establishments grew by an average annual growth rate of about 7.14% per annum which, in absolute terms is an insignificant expansion from 1 in 1994 to 2 in 1997 which stagnated right through to 2008;
v. Vegetable processing establishments grew from 1 in 2003 to 2 in 2005 and stagnated right through to 2007 and dipped down to 1 in 2008 reflecting an overall average annual growth rate of zero percent;
vi. Groundnut milling establishment stagnated at 1 from 1994 through to 2002 and stagnated at 2 in 2003 through to 2007 and dipped down to 1 in 2008 reflecting an overall average annual growth rate of zero;
vii. Private ice plants grew from 3 in 2006 to 5 in 2008 reflecting an average annual growth rate of 33.33%;
viii. Community ice plants stagnated at 4 from 2006 to 2008 reflecting zero average annual growth rate from an optimistic significant start; and,
ix. Vegetable production and export enterprises slumped from 18 in 1994 to 2 in 2009 reflecting an average annual declining rate of 6.35% explained by sudden mass exit of most of the members of the defunct Association of Horticultural Producers and Exporters of The Gambia (GAMHOPE).

Although the agro-based industries did not undergo any significant growth and expansion during the last one and half decades, their potentials as employment pockets are significant. The realization of these potentials especially in fish, livestock, horticulture and groundnut processing which are enormous were constrained by primarily persistent macro- and micro-economic policy slippages especially in the ANR sector and secondarily by limited access to technology, entrepreneurial and capital resources and organized markets. Involvement of different groups in these industries is varied although the involvement of farmer organizations is rather low and marginal. Thus, addressing the important constraints of market size, technologies, trade, fiscal and pricing policies, new product lines and processes need urgent policy attentions.

1.6.2 2009 – 2015 ANR Policy Era

The GNAIP placed deserving recognition on the importance of the rapid growth and development of agro-based industries in all its five technical components with an implicit view of maximizing their potentials in the creation of both off- and on-farm jobs, expanding raw materials supplies and outlets and adding value to such produce and, the provision of overall stimulus to growth through further inter-sectoral integration. Although only limited achievements of the Plan can be shown in this regard as at 2015, its strong emphasis on their development is a well conceived one which will be maintained through by the 2017 – 2026 ANR Policy.

The trends in the development of the industries for the period 2009/2015 are presented in **Table 1.7**. Structurally the sub-sector has changed slightly by the entry of three more new enterprises as follows: fish, rice, saw milling, abattoir, vegetable processing, groundnut milling, private ice making, community ice making, public fish markets, vegetable production and export, fish meal plants and cashew processing. The sub-sector has not changed significantly in terms of absolute number of enterprise types since 1994 as evident from the average percentage growth of establishments.

The following summarizes the development of agro-based industries in the period 2009/2015:

i. Fish processing establishments declined slightly from a high of 6 enterprises in 2009 to a low of 5 in 2015, maintaining a constant number from 2009 right through to 2013 and dipped down to 5 in 2014 and 2015 manifesting an average annual marginal declining rate of about 2.78% over the period;
ii. Rice processing establishments of commercial scale stagnated at 1 throughout the period at a zero percent average annual growth rate which further reaffirmed the conclusions of 1994/2008 analysis for a need to proliferate the subsistence type individual and community small-scale processing machines;
iii. The number of saw milling establishments declined from 82 in 2009 to 54 in 2016 by an average annual declining rate of about 5.82% which is consistent with the conclusions of 1994/2009 analysis that the bulk of the observed growth rate of that period was import driven by logs originating from the Casamance region of Senegal, the stability of which supply source is dictated by the vagaries of a rebel movement;
iv. Abattoir establishments stagnated at its 2008 level of 2 throughout the 2009/2015 period at a zero average annual growth rate;
v. Vegetable processing establishments grew from 1 in 2009 to 6 in 2015 depicting an average annual growth rate of 83.33%;
vi. Groundnut milling establishment stagnated at its 1994 level of 1 throughout the 2009/2015 period at zero average annual growth rate which portends the lack of serious private sector interest in the processing and marketing links of the groundnut value chain with the implication that very serious and committed policy actions are needed to woo back appropriate private sector interest in the industry in the medium-term;
vii. Private ice plants grew from their 2008 level of 5 to 12 in 2015 at an average annual growth rate of 23.33% during the period which echoes the hope of a swift private sector comeback in the industry given the right policy environment for private sector investment ;

viii. Community ice plants declined from their level of 4 in 2008 to 1 functional plant in 2015 at an average annual declining rate of 11.11% emphasizing the need for a carefully selective investment capital for community ownership and management and/or a very well designed public monitoring system and bailout arrangements for sustainability;
ix. Public ice market establishments which started in 2010 with the first one in Brikama Town was increased to 2 with the establishment of a second one at Tipper Garage in Bakoteh in 2013, reflecting an average annual growth rate of 16.68% under, seemingly successful, public project management arrangements, appearing to be a well conceived investment venture, lending support to the conclusions on public ice plants above;
x. Vegetable production and export enterprises stagnated at their level of 2 in 2008 throughout the 2009/2015 period in spite of the industry's huge export and job creation potentials, reflecting a zero average annual growth rate;
xi. Fish meal plant establishment commenced with one privately owned enterprise in 2015. While the enterprise is still too young for any meaningful analysis for public policy deductions, it can be described as an investment in the right area given the perennial problem of local availability of high quality feed for the potentially lucrative poultry industry; and,
xii. Cashew processing establishment started in 2011 by the growers' association and rapidly mushroomed by an average annual growth rate of about 100% to 5 enterprises in 2015 and, given the commodity's substantial poverty reduction potentials like groundnuts and tourism, promoting its expansion for both domestic and export markets deserves calculated medium-term public policy actions.

The overall conclusions of the analyses of the performance of the subsector and their implications for poverty reduction consistent with food, income and nutrition securities and economic integration and growth observed for the period 1994/2008 equally apply for the period 2009/2015.

1.7 CONSTRAINTS TO ANR SECTOR DEVELOPMENT

Review of available information on constraints to food and ANR development in the country reveals that they can be summarily classified into three board categories: overall sector constraints, sub-sectoral constraints, and institutional support services and system-wide constraints.

1.7.1 Overall Sector Constraints

Despite its primary role in the economy, ANR's share in total employment and most importantly its contribution to exports have been on the decline. This is due to adverse climatic conditions, declining international primary commodity prices and, inadequate domestic policy remain to be obstacles to rural poverty reduction and improved household food security through increased production and productivity. Consistent with these challenges, the ANR sector production promotion policies and programme will continue to emphasize the provision of an enabling environment for greater private sector participation, diversification of the production base, increasing domestic savings, stemming rural-urban migration, sustaining a healthy environment and containing natural resources degradation as well as the mainstreaming of women in the development process. Key sector-wide constraints that will militate against the realization of these sector policy objectives in the medium-term include:

i. Lack of copious supply of water and energy with resultant over-dependency on rainfed agriculture and the increasing unreliability of rainfall amounts and distribution;
ii. Limited access to credit facilities with resultant low private sector investment in the ANR sector;
iii. Inadequate and untimely supply and availability of essential production inputs (seeds, agro-chemicals, etc.).
iv. Low productive enterprise opportunities for producers to invest in which is reinforced by low productivity and lack of adequate ANR incentive schemes for producers to minimize production costs;
v. Paucity of skilled man power;
vi. Inadequate infrastructure (transport, market, equipment, irrigation and processing facilities) causing glut, post-harvest losses and scarcity of ANR products especially vegetables and fish during certain time of the year;
vii. Unsatisfactory land tenure system making productive land inaccessible to potential additional users; and,
viii. Limited arable land due to unprecedented high demographic growth rates and/or rapid urbanization all of which have a negative impact on natural resources leading to deforestation, short fallow periods, reducing rangeland sizes and loss of farm and wood lands to settlements.

1.7.2 Sub-Sectoral Specific Constraints

Traditional Food and Cash Crops Sub-sector: The traditional food and cash crop sub-sector exhibits a generally sluggish trend. This is attributable to a host of constraints, the most important of which are erratic rainfall pattern; the inherent low fertility/productivity of the land compounded by rapid development of acid sulphate soils, bushfires and salt water intrusion in swamps; high pre- and post-harvest losses due to pest and diseases such as aflatoxin contamination; limited access to improved inputs; declining farm labour supply; institutional bottlenecks such as land tenure, marketing, research and extension; and, poor rural infrastructure. Some key medium-term policy actions to mitigate some of these constraints with immediate-term positive production and productivity impacts will include: creation of national postharvest losses reduction coordination committees with a view to identifying, prioritizing and sharing postharvest losses data and practices across a range of strategic commodities and raising awareness on postharvest losses; increased knowledge and techniques in sustainable production intensification; and, stemming the persistency of aflatoxin contamination in groundnuts.

Horticultural Sub-sector: Horticultural production remains constrained at 4.2% GDP despite the phenomenal growth potential of the sub-sector. Key among the limiting factors in addition to some important overall sector constraints are lack of access to markets both local and international, the inadequacy of processing and marketing facilities and, seasonality of production due to poor production organization, lack of copious water and energy supplies and poor land development.

Livestock Sub-sector: The livestock sub-sector's contribution of about five percent to GDP continues to be constrained by frequent outbreak of diseases; poor and inadequate husbandry

practices; scarcity of feed, fodder and drinking water especially during the long dry season; and inadequate infrastructure such as marketing and processing facilities; lack of adequate watering facilities, poultry feed mills and storage facilities; lack of improvement of identified rangelands; demarcation of access routes (stock routes) and pasture development as most of the palatable grass species had either disappeared or been replaced by unpalatable species; low level of development of the poultry and milk industry especially hatcheries, feed mills, refrigerated vans, milk production and processing units; inadequate storage and processing, provision of dairy units and packaging facilities; inadequate qualified personnel (nutritionists, vets, range specialists, production specialists etc.); limited research on genetic improvement of the Trypanotolerant breeds and development of guidelines on introduction of germplasm; and, limited research on improvement of feed resources for cattle and small ruminants

Fisheries: The contribution of the fisheries sub-sector is constrained by a myriad of economic, physical, technical, institutional and social factors. Notable among these are the lack of a fisheries port; well developed distribution and marketing systems; high operational costs and lack of investment resources; inadequate personnel with managerial and technical competence to operate fish business ventures (management of fish factories, fishing fleets); inadequate number of tradesmen (mechanics); lack of repair and maintenance facilities; lack of precise knowledge on the biology and population of fish species of economic importance; inadequate monitoring and surveillance system**;** pollution of spawning sites from urban waste discharge and chemical residues in surface run-offs from agricultural lands; use of illegal fishing gears and illegal mesh sizes; fishing in fish spawning areas; and, pressure in the exploitation of demersal fish stocks.

Forestry: Forests represent important natural resources for The Gambia. Although their combined contribution with wildlife sub-sector to GDP is estimated at about one percent, they provide more than 85% of the domestic energy (fuel-wood) and about 17% of the timber needs of the population. The output of the sub-sector is constrained by frequent and uncontrolled bushfires; high cost of forestry development; inadequate human and financial resources; deforestation which eventually encourages desertification, a phenomenon which has great adverse effect on soil fertility; inadequate involvement of local communities in forest management and the sharing of benefits that accrues from it resulting in poor public attitudes towards the protection and management of its biological resources; encroachment of farms into forest lands; and, illegal harvesting of resources (eg. hunting) due to weak enforcement of the legal framework on management and utilization of the faunal and floral resources of forests.

Parks and Wildlife: Wildlife protected areas represent important natural resources for The Gambia. Although their combined contribution with forestry sub-sector to GDP is estimated at about one percent, they provide invaluable eco-tourism attraction. The output of the sub-sector is constrained by frequent and uncontrolled bushfires; high cost of wildlife development; inadequate human and financial resources; lack of and/or weak involvement of local communities in wildlife protected areas' management and the sharing of benefits that accrues from them resulting in poor public attitudes towards the protection and management of their biological resources; inappropriate perception of communities in viewing wildlife protected areas as their properties seized by Government; encroachment of farms into Protected Areas; conflict of Customary Land Tenure System vis-à-vis the strategic plan to increase protected Areas by 10% of land area of the Gambia; and, illegal harvesting of protected areas resources

(eg. hunting) due to weak enforcement of the legal framework on management and utilization of their biological resources.

1.7.3 Institutional Support Services and System-Wide Constraints

Technical Departments: The capacities of public and private institutions are the major determinants for successful ANR and rural development programmes and projects. The paramount constraints are: inadequate incentives to motivate staff (night allowances, mobile phones fuel and mobility); inadequate rehabilitation of the office complexes and equipment especially with internet facility to create a conducive work environment; inadequate development and operational funds for the sector; and, inadequate number of trained high level and middle level manpower. These problems are further exacerbated by organizational factors such as weak coordination of the activities of the various stakeholders in the sector namely:- NGOs, farmer associations, private agricultural companies etc.

Farmer Organizations: The 60 years of co-operative development efforts in The Gambia have not succeeded in institutionalizing viable economic groupings. A key constraint to development of such farmer organizations has been the over-involvement of the Government in trying to exploit their collective strength for political ends; failure to transform farmer groups into producer cooperatives; and, lack of sustainable financing for groups to investment in lucrative enterprises such as short circle crop and livestock species.

Extension: Through the World Bank/IFAD-supported Agricultural Services Project, the extension system was revitalized and reorganized to make it more cost-effective through the use of the integrated polyvalent extension system. However, the performance of the extension system continues to be constrained by inadequate improvement and development of ANR extension systems through continuous training to improve their outreach activities; inadequate resources including qualified personnel, equipment and material, and operational budget; large extension worker/famer ratio; limited knowledge and skills of some extension workers and farmers in sustainable agricultural production and productivity; and, lack of robust mobility system for timely effective extension services delivery.

Agricultural Research: The problems and constraints of research in The Gambia are typical of small National Agricultural Research Systems (NARS). They revolve around the scope of research (programmes, research areas, disciplines) given the scale of resources (human, physical and financial) available. The over-riding constraint in this regard is lack of financial resources to implement the essentials of the Agriculture Research Master Plan to anchor the ANR policy pillars by mitigating critical research issues such as inadequate resources in terms of qualified personnel, finance and infrastructure; and, dependency on funding from donor agencies and technologies developed from outside. Other weaknesses of The Gambian NARS are inexperienced research personnel and high attrition rates of senior scientists which undermines the availability of the required critical mass of highly trained Gambian ANR scientists; low level of production systems input resource management research activities; and inadequate research resources to investigate the management of post-harvest crop residues.

Rural Finance and Input/Output Marketing: The constraints faced by these cross-cutting issues include the lack of clear cut rural finance policy; too many actors with conflicting agendas,

ranging from the provision of interest free loans to those with market determine rates thus making it difficult to stimulate them to allocate more financial resources with a view to addressing ANR infrastructure investment needs such as reduction of postharvest losses; and, lack of adequate skills in the management of rural finance system.

Marketing and access to markets of both input and output are major constraints to ANR development. Key factors affecting marketing in the Gambia include: lack of inadequate access to credit facilities by small holder farmers/operators to purchase inputs; inadequate ANR input supply networks due to poor private sector involvement because of poor incentives; and the unmet need for good agro-processing, storage facilities and value-added opportunities, quality of produce, market roads etc.

Agricultural Mechanization: The use of draught animals for land preparation is the most prevalent form of mechanical power. Efforts in the widespread adoption of the technology have been successful in certain parts of the country such as North Bank Region (NBR) and Central River Region/North (CRR/N). These efforts need to be extended to other parts of the country. The cost of equipment and draught animals is however, often beyond the means of the small farmer and for this category of farmers to benefit from mechanization, appropriate social organizations need to be devised and/or hiring schemes targeting them. While animal draught has been fairly successful in the Gambia, the same is not true for full-scale mechanization using conventional tractors for obvious reasons of cost and skills requirement. Thus, uses of low output, labour consuming land preparation and production systems are still prevalent with resultant inadequate land preparation (e.g. ploughing) machinery.

Land and Water Resources: The soils of the Gambia are generally fragile and therefore require care in order not to hasten their degeneration. This coupled with a land tenure system which discriminates against women, land degradation as a result of salinization and erosion and, the decline in the use of fertilizer to augment the soil fertility hinder the achievement of the optimal returns to land and labour in agriculture. The fluctuating rainfall trend during the last decades (**Annex Table 1.3**) together with the tidal nature of The Gambia River constraints the surface water development potential of the country. There is also a general decline in groundwater availability due to excessive exploitation of the upper or shallow sand aquifer. Similarly, the use of the surface water potential for large-scale agricultural production in the medium-term is limited by environmental considerations. While the long-term alleviation of the latter must lie in regional water sharing arrangements, the medium-term solution to the former is the use of renewable energy resources to exploit our huge deep sand stone aquifer water resources for all year round irrigated agriculture and watering of livestock.

Gender and Youth: The contribution of women and youths in agriculture and general household welfare is limited by a host of constraints. These constraints range from lack of property rights, small-scale of operations, the use of traditional production technologies, low access to productive resources including capital and improved inputs, lack of access to technical information and knowledge through to inadequate distribution and marketing systems.

Household Food Security: The total staple food availability (2011/12) was about 104,598 t, met through local production (53.5%), import (37.9%) and external food aid (8.6%). Over 90% of meat and fish is from domestic production, but cereals (principally rice, the country's staple

diet) come from importation and domestic production, in almost equal quantities, making The Gambia one of the countries in the sahel region with a serious food insecurity problem. The national calorie intake is clearly insufficient: a third of the total population of 1.8 million has food intakes which provide less than minimum energy requirements. Behind the general average national figure of 2,327 kcal/caput/day lies a range of 2,276 to 2,384, depending on the region of the country (lowest in North Bank and Lower River Regions). Of this intake, cereals contributed 53% of the total energy supply, animal products 6%, added oils 20% and fats 2%.

Thus, the major policy concerns in household food security are availability, stability of supply, access and proper utilization. The key constraints in these policy concerns stem from the vagaries of the domestic food production environment, the dynamics of the international food markets, prevailing local social norms and dietary habits, processing and preservation, domestic marketing system and, overall national income level and earning capacities.

Environment: Belated awareness of the deleterious effect of some farming methods and resource harvesting techniques has resulted in destruction of the productive capacity of the ANR resource-base in some cases. In The Gambia, inappropriate farming methods, ill-conceived mechanization policy and irrational and unsustainable resource use patterns are prevalent. These processes which are devoid of any considerations for environmental protection are seriously contributing to land degradation; water pollution; destruction of marine, forests and wildlife habitats; and, ill health.

The forgoing processes are perpetuated and accentuated by: lack of mainstreaming /incorporation of climate change aspects into most sub-sectoral policies; limited development of local conventions on natural resource management [three conventions had been developed in the districts of Nianija, Niamina East and Kiang West during the Regional Project on Sustainable Management of Endemic Ruminant Livestock in West Africa (PROGEBE)]; inadequate and improper management of agricultural chemical (pesticides and fertilizers); failure of some projects to undertake Environmental and Social Impact Assessment (ESMP & ESIA) fish curing using fuel wood for smoking which degenerates coastal forests (woodlots and mangroves vegetation); pollution from fish curing using smoke poses health hazards for processors; and, poor management of waste from the sector (post-harvest and after processing).

Part II: AGRICULTURE AND NATURAL RESOURCES (ANR) POLICY 2017 - 2026

2.1. RATIONALE

Despite the Government's stated policy objectives and strategies over the last twenty years of achieving increased food and cash crop production, improved nutritional standards of the population and diversification of the ANR base without damage to the environment, the low rate of performance of the sector vis-à-vis population growth has resulted in a remarkable deterioration of these cardinal policy objectives. The food sub-sector has in particular, experienced persistent decline and the country now depends on imports for approximately 50 percent of its requirements, at a huge cost ranging from D84 million in 1994 to about D1.923 billion in 2014 for only rice imports at cost insurance and freight (CIF) value whereas other non-rice imports of locally produced food commodities ranged from about D115 million in 1995 to D1.716 billion in 2015.

At the macro level, the overriding objectives of policies directed at ANR were aimed at a more favourable environment for producers, which will encourage increased productivity and production, employment, incomes and improved food security. In The Gambia, where small-holder farming/operations are predominant, this meant creating conditions in which small farmers/operators particularly women farmers/operators who are predominant in most farming and agro-business activities, will be stimulated to produce more efficiently and generate surplus for the market. The realization of these macro level policy objectives continues to be a mirage.

At the micro level, policy measures have not created adequate opportunities for increased production of food and cash crops, livestock, and fish products by small farmers/operators. This was due to the fact that knowledge of these opportunities were inadequate, as the relevant information or data were not available or readily accessible, and were not linked to interpretations in terms of options for improvement in specific farming/production systems or other local initiatives. As a result, traditional farming/production methods continue to be used by the majority of farmers and operators at the detriment of environmental integrity. These methods, as has been demonstrated, are no longer adequate to cope with the increased pressure of population on the ANR sector, and thus, the expectations for improved living conditions for the majority of the populations have not yet been realized.

The foregoing conclusions from the brief analysis in Part I of the ANR sector's performance over the last two decades, 1995 to 2015, in the context of the structural changes in the economy and developments in international trade as envisioned by ''The Gambia Incorporated…….Vision 2020'' clearly indicated the emerging and persistent constraints facing the sector's present and future development. These major constraints which debouched the lacklustre nature of the commitment to the implementation of Vision 2020 include inter alia:

i. Slow rate of technological development and innovation with regards to product development, process and packaging, production systems and varietal improvements;
ii. Increasing labour shortages, wages and cost of production, as well as ageing farm labour due to exodus of able-bodied rural youths through the 'back way' or rural-urban drift in preference for non-farm jobs;
iii. Increasing cost of new land development for irrigation and/or relative scarcity resulting from more remunerative alternative uses and illogical expropriation of large tracks of fertile farm lands from their traditional owners or would-be productive users;

iv. Relatively low growth rate and magnitude of capital expenditure in ANR that impedes its rapid transformation, structural changes and integration with manufacturing, tourism and hotel industries (**see Annex Table 1.10)**;
v. Inflexibility of institutional and related policy instruments that limit the ability of the sector to adjust swiftly to changing comparative advantages and diminishing international competiveness; and,
vi. Limited policy and development options in achieving sustainable development.

Thus, the 2017 – 2026 ANR Policy is a significant departure from the development emphasis and thrusts of the last twenty years. An economy that is built on the philosophy of Vision 2020 must have component sectors, especially ANR, which are equally vigorous and dynamic. The ANR policies of post-2015 will thus be similarly designed and will hence depart substantially in content, form and emphasis from 2009/2015 policy.

2.2 THE VISION

The 2017 – 2026 ANR Policy is founded on the vision for the creation of a ***marketed-led commercialized, efficient, competitive and dynamic ANR sector in the context of sustainable development.*** The structural transformation and rationalization of activities in the sub-sectors will be the main mechanisms for change. The process of change will allow the sector to contribute to and benefit from the growth and development of the economy as the latter moves along the trajectory of industrialization.

Thus, the need for the 2017 – 2026 ANR policy rests on the following:

i. Increasing importance of land use optimization as substantial new land opening as a continued strategy for ANR development is not tenable and/or sustainable. The frontiers are fast becoming physically and agronomically limited as evident from **Appendix 1.1** and therefore, the increasing cost of new land, especially irrigable land development, can only be justified by socio-economic considerations. Thus, development options are limited to in-situ development which places strong emphasis on existing subsistence farms and medium sized private farms as source and base for further intensification and enhancement of output, productivity and income;
ii. The importance of integration of ANR with manufacturing, tourism and hotel industries to provide synergistic stimulus to output and income growth of these sectors is sine-qua-non. New and additional value added employment and investment opportunities created through such integration will absorb displaced ANR labour resulting from increased appropriate mechanization. Agro-based and downstream development including related activities will thus be an important source of rural household income increases as well as reducing the exposure of the income to unstable world prices for primary ANR commodities. The fairly adequate and locationally well distributed network of infrastructural and communication facilities and availability of adequate utilities and skills will facilitate this shift towards greater integration;
iii. The increasing importance of productivity improvement as the main source of output growth is also a sin-qua-non. Hence the need to intensify R&D for the generation/introduction of new/improved processes, methods and development of

products and product lines that are of higher value and of standards that can compete in international markets will become a necessity;

iv. The commercialization of ANR, operated purely as agribusiness will demand a critical mass of highly skilled and related expertise. The composition of ANR output will change in favour of those products that embody high content of knowledge and management skills. In this regard, a Human Development (HRD) Plan encompassing both extension and training curriculum, methodologies and facilities including the delivery system will be formulated to cater for the requirements for specialist advice, and consultancies, technology up-grading, informatics and greater coordination with R&D efforts;

v. The emerging importance of accessibility to adequate food supplies to carter for not only domestic and export needs but also as an important stimulus to output and income growth of ANR apart from supporting a dynamic agro-based industrial sub-sector will be frightfully necessary. Food production has also to address questions of nutrition, food quality and variety. There is thus a need for Food Policy which addresses all the foregoing considerations;

vi. The need for implicit/tacit regional specialization and spatial relocation of ANR research activities in particular, based on agro-ecological differences, resource endowments and development potentials will be equally important. The varying suitability of lowland ecologies for development will be the focus for future public and private initiatives for ANR development especially in rice production;

vii. The continuing importance of efforts to narrow the gap that characterizes the women-men farmer/operator dichotomy, production and yield levels, drudgery, processing and marketing capacities due to technological, management, knowledge and informational gaps between women subsistence farmers and their male counterparts still persist, resulting in fairly wide income differences and efficiency of resource use. Thus the narrowing of these gaps will form an important agenda for women farmer education encompassing training and extension and broader enhancement of technical, management, entrepreneurial capacities to facilitate the involvement of organized women groups and individuals in commercial and agribusiness undertakings; and,

viii. The concerns for the conservation of the environment and the sustainable use of ANR resources demand consideration in the socioeconomic planning and development paradigm. ANR whose development draws heavily, particularly on land, forestry and water resources has now to come to terms with trade-offs involve in sustainable development and these have changed the rationale and the determination of optimal development in policy formulation, project planning and resource exploitation plans. Resolving these trade-offs and developing ANR sector on sustainable basis will be an important departure from traditional planning approaches and considerations.

2.3 OBJECTIVES

Apropos to the aforesaid vision of our ANR Policy, the structural transformation and rationalization of interventions envisaged in the sub-sectors will thus be guided by the attainment of ***the over-arching objective of the ANR Policy (2017/2026) of maximization of poverty reduction and enhancement of food, income and nutrition securities through the optimal utilization of the resources of the sector consistent with safeguarding the integrity of the environment.***

In specific terms therefore, the objectives of the 2017 – 2026 ANR Policy are:

i. To achieve higher level of production and productivity of primary commodities through rehabilitation, intensification and expansion of ANR production systems and processes;
ii. To enhance higher level of expansion and development of the food industry sub-sector;
iii. To achieve wider and more effective participation and representation of subsistence farmers/operators especially women and youths in modern and commercial production, agribusiness and trade;
iv. To achieve a balanced development between the ANR sector and other sectors of the economy; and,
v. To enhance the economic and structural integration of the ANR sector with the rest of the economy especially, manufacturing, tourism and hotel industries.

2.4 MACRO-SECTORAL FRAMEWORK (2017-2026)

The projections of value-added, production, employment, factor productivities, local raw materials utilization rate and sources of growth of output embody the underpinning and objectives of the ANR Policy (2017-2026) consistent with basically market driven growth of the economy. Value addition in ANR is expected to grow at 6.14% per annum in the period 2017-2026 **(see Table 1.5 above)** to be driven principally by crops (vegetables and fruits), livestock and fisheries production. Total employment in ANR is projected to grow at a rate of 1.05% per annum compared to 23.94% for manufacturing, by deliberate and conscious structural adjustment in the sector through expansion of agro-based industrial development and appropriate mechanization of crop production to enable the latter to absorb more labour from the labour force and off the land.

2.4.1 Production and Value-Added

Although the overall ANR production base is unlikely to substantially expand and diversify in terms of natural resources of land, fauna and flora, range of crops and non-crop activities it will however, be rationalized and deepened. More emphasis will be given to the development of crops, in particular horticulture (olericulture, pomology and floriculture), upland and tidal rice, and also fisheries, forestry and livestock production whose potentials for import substitution will be harnessed and promoted to expand their export markets and marketing. An important stimulus to ANR production growth will come from cereals especially coarse grain intensive production for the domestic market including food and intensive livestock production raw materials. A two-way synergistic stimulus will be realized through a broader and deeper integration of crops and livestock production systems.

Food production will be increased substantially through intensive and limited expanded cultivation of tidal and upland rice to improve the self-sufficiency level of domestic rice from the 2004 level of about 20% to meet a target of about 50% **(see Annex Table 1.5)** and the societal nutritional needs such as fish, beef, mutton, poultry, fruits and vegetables. The shares of these major food items in the daily household calorie consumption per adult equivalent in **Table 2.1** will be substantially altered from the present composition pattern towards a more balanced nutritional status by the year 2026. A strategy of import substitution and export in fisheries, horticulture and livestock sub-sectors will be pursued to improve dynamism and ANR's share of

the economy. This will be supported by renewed R&D efforts to improve existing comparative advantages and enhance competitiveness to create a diversified export structure and expanded export markets. The bulk of this increase in value-added will come from import-substitution supplemented by some exports.

Table 2.1: Daily Household Calorie Consumption per Adult Equivalent, Urban and Rural Areas Compared (calories per adult equivalent and in percent of total calorie consumption)

Food Equivalent Category	Urban Sample		Rural Sample	
	Calories	% share	Calories	% share
Dairy products	74.5	2.4	58.4	2.3
Fish	188.4	6.6	144.3	5.9
Fruit/vegetables/roots	147.3	5.0	83.8	3.5
Grain products	210.2	7.1	64.8	2.6
Groundnut	90.0	3.1	207.8	8.7
Groundnut oil	289.3	10.3	124.6	5.3
Meat	33.4	1.1	32.5	1.3
Palm oil	168.0	5.8	61.5	2.5
Rice	1,205.2	44.1	943.9	37.4
Sugar	244.2	8.6	186.1	7.5
Other grains	155.1	5.1	577.1	22.5
Other	20.9	0.7	12.9	0.5
Total Calorie Consumption	2826.6	100.0	2497.6	100.0

Source: Cornel Food and Nutrition Policy Project (CFNPP) Survey

With increasing land constraints, greater emphasis will be on increasing land and labour productivities and intensity of land use as well as changes in land use pattern. Changes in ANR output composition will be pursued through expanded development of high potential products such as vegetables, fruits, fish and livestock. The crop mix and other ANR production activities will optimize on available labour resources consistent with the need to maintain sustainability. The major sources of growth of output will be yield and quality improvements. Overall, the main source of growth in the future will be productivity improvements.

2.4.2 Employment

New employment opportunities in the production of traditional food crops is limited as relatively little new land can be opened up for cultivation. The ability of the presently cultivated land area to sustain current employment levels will be reduced as appropriate mechanization in agricultural production and processing activities are further adopted. In crop production, land/man ratio will reduce while livestock rearing, fishing and horticulture will be increasingly capital intensive.

The pace of disengagement of labour from the land (factor substitution) will depend on the rate and form of technological development in production methods and processes, level of wages relative to other factors of production and product value in both crop production and agro-based industries. Rationalization of, and changes in the production processes in all sub-sectors in the face of increasing labour cost will change the factor proportions, with management and other human resource capabilities becoming more important. Higher labour productivity will be a consequence of the above transformation in consonance with the anticipated 2017/2026 macro-sectoral framework in **Table 1.5.**

2.4.3 Investment

Modernization, structural reorganization and rationalization of ANR production systems with a view to increasing productivity and, expanding and diversifying the productive base will require substantial expansion of capital expenditure in the sector. Since new land development will be limited, capital investment will focus on the expansion and creation of productive capacities in horticulture (olericulture, pomology and floriculture), livestock rearing, forestry and wildlife, fisheries, ground water resource exploitation and the integrated development of related agro-based industries.

There will be further expansion in processing, refining and crushing capacities especially for groundnut and sesame and further downstream and new product development. Projects that utilize new appropriate technologies, processes and reasonably mechanized will be also important in the gross capital formation. In addition to local capital, foreign investment will be promoted and encouraged to draw upon their international market connections, technologies, research and development and, management acumen. The proportion of capital spending in distributive activities related to agricultural products (storage, rural roads and transportation) will be of increasing importance. Further development of, and capital formation in the primary and agro-based capacities will stimulate related industries through their complementary and linkage effects. Non-state actors especially the private sector will dominate the anticipated investment spree while the public sector spending will focus on public goods type services and projects such as drainage and irrigation, R&D efforts and farm roads. Investment in the software type and other related human resource infrastructure such as training and extension will be given a substantial changed emphasis within the framework of the Local Government Reform and Decentralization process. Existing technological possibilities will be further expanded through concerted R&D efforts and technological adaptations. Fiscal incentives and other macro-economic policies will be further reviewed to be promotive of environment friendly investments in agriculture and agro-based processing/downstream activities vis-à-vis redistributive trade in particular.

2.5 KEY STRATEGIC ISSUES

As evident from the foregoing brief analyses of the performance of the stated government policy and its strategy measures over the last 20 years, the realization of 2017/2026 ANR policy objectives will continue to be constrained by myriad of constraints identified by the Review Meetings which are subsumed under three broad groups: overall sector constraints; sub-sectoral specific constraints; and, institutional support services and system-wide constraints, detailed out in section 1.7 above. The mitigation of these constraints will depend largely on the resolution of relatively few but key strategic policy issues. These are:

a) access to production resources especially productivity improvement technologies to achieve the desired levels of production and productivity increases;
b) developing input/output markets and marketing infrastructure appropriate to the needs of a widely dispersed small-scale resource-poor farmers;
c) stimulating sustainable private sector investment in ANR to integrate the sector and manufacturing and tourism sectors;
d) fostering a shared sense of responsibility for natural resources conservation; and,

e) fostering a shared sense of understanding of the linkages among population growth, food supply and natural resource depletion and degradation

Thus, the explicit 2017/2026 ANR policy objective of achieving food security and alleviating poverty consistent with maintaining the integrity of the environment will, to a large extent, depend on the resolution of these strategic issues. Therefore, the recognition of this fact provided the framework for the selection and design of the policy strategies for the decade to come.

2.6 STRATEGIES

The realization of the underlying growth and developmental objectives of the over-arching objective of the ANR Policy (2017/2026), in particular, the implicit transformation of the sector orchestrated by the new Vision of the 2009/2015 policy, will be pursued through the following strategies:

a) Optimizing Resource Use;
b) Accelerated Agro-based Industries;
c) Enhancement of R&D Effort and Technology Diffusion;
d) Greater Role of the Private Sector;
e) Reformed Marketing Strategy;
f) Expanded Food Production;
g) Human Resource Development; and,
h) Development of Viable and Self Reliant Farmer/Fishermen's Institutions.

2.6.1 Optimizing Resource Use

A key strategy to spur and sustain the potential growth momentum of the sector is to optimize the use of its resources of land, labour, capital and entrepreneurial/management. The focus of these efforts will be on:

i. Effective and systematic utilization of abandoned low land fields;
ii. Realization of productivity and other efficiency gains in both crop and shared resources sub-sectors;
iii. Optimal use of land, water and other resources for new lowland development and rehabilitation/replacement investment;
iv. Creation and optimal use of agricultural, horticultural and sub-sectoral surpluses to support the rapid development of agro-based industries;
v. Improvements in the working of the labour market;
vi. Re-organization of farm production system and structures; and,
vii. Sustainable development of water resources, especially ground water, through investment to explore the huge re-newable energy potentials of the country and other engineering infrastructure for irrigation, drainage, and farm access.

The phenomenon of abandoned fields is a consequence of myriad of supply side and demand side problems including uneconomic farm size, labour shortages, irrigation and drainage limitations, aging farm population and inadequate incentive farm price policy. Under the

2017/2026 policy, the programme of rehabilitation and improved access initiated by on-going projects will be accelerated.

2.6.2 Accelerated Agro-based Industries

The main strategy to improve and sustain ANR growth will be through integration of the sector with manufacturing, thus providing an opportunity to broaden the industrial production base and maximizing the inter-sectoral growth and developmental stimulus arising from the linkages.

The potentials of integration include:

i. Through a synergistic two way demand and supply flow between ANR and manufacturing sectors by way of raw material supply to the former and the demand for ANR inputs such as farm machinery spare parts and agricultural chemicals;
ii. Further growth and expansion activities in manufacturing, utilizing either wholly indigenous or in combination with improved raw materials and other inputs producing higher value-added products; and,
iii. Further downstream and higher value-added activities building upon local raw materials by making them increasingly available in the future.

The raw materials available for further integration include rice, coarse grains, fruits, vegetables and fish. The development of diversified and comprehensive high value-added agro-based industries including animal feed, food preparation eg coarse grain flour, canned fruits & juice, sea-foods to provide further stimulus to ANR output growth as well as to the growth of the manufacturing sector. Another strategy to improve the integration of ANR with manufacturing will be by drawing upon potentials in import-substitution and the growth of local demand and exports.

2.6.3 Enhancement of R&D Effort and Technology Diffusion

R&D technological advancement and technical changes are required to overcome the production process, labour and other factor constraints in ANR sector. R&D will form one of the thrusts in providing technological possibilities and growth opportunities to sustain and enhance ANR output as well as the contribution to and integration with the rest of the economy. Thus, the research system will be appropriate decentralized along agro-ecological zones in line with the Research Master Plan of 2013.

The need to improve productivity and efficiency in the production of food and other ANR products, the integration of ANR with manufacturing sector, the maintenance of competitiveness in the international market and maintaining sustainable growth will necessitate the realization of production processes and methods that are highly intensive in technology usage.

R&D will be based upon the following considerations:

i. Investment in pro-poor, pro-environment programmes to mainstream poverty-environment into national, sectoral and sub-sectoral developments from policy making to budgeting, implementation and monitoring;
ii. R&D activities will be restructured to be conducive to creativity and innovation;
iii. R&D activities to be more focussed on areas that need immediate solutions and identified potential winners; and,
iv. Development of high technology but low-input system such as integrated pest management (IPM) to handle ecological and other obscurants of sustainable development.

2.6.4 Greater Role of the Private Sector

The transformation of the ANR sector into a competitive and efficient sector will require substantial investments and technological resources from the private sector. New employment opportunities and output as well as new product development, market expansion and diversification, deepening of the production base as well as processing will be important areas of private sector involvement. Bearing in mind the slow and declining rate of growth of private sector capital formation in ANR in the last twenty years and increasing trend of outflow of resources from the sector, incentives and other promotional packages will be developed to attract and retain private sector resources.

The focus therefore, will be on the improvement and creation of an investment climate for both local and foreign investors through the following measures:

i. Fiscal incentive system that promote mechanization and high technology investment in new products and processes including the development of new sources of growth, market expansion and diversification. The investment package will be structured to attract foreign investment and expertise in selected areas of ANR activities such as groundnut, horticulture and fisheries sub-sectors. The above will be supplemented with supportive regulatory measures and environment with regards to finance, labour and accessibility to land. The workings of the labour market will be carefully monitored to be supportive of private sector investments;
ii. Expanded role of private sector expertise and capital in the uptake of projects for privatization including through joint-ventures with public enterprises;
iii. Integration of corporate and modern private sector investment and activities with farmers and farmers' associations through contract farming, out-growers schemes and other arrangements that expand market outlet for small-scale producers especially women farmers; and,
iv. Expansion of training opportunities to produce the required skills and trained manpower in various fields.

2.6.5 Reformed Marketing Strategy

Successful marketing of ANR products will be a necessary pre-condition for further growth in the export market which is becoming more competitive and sophisticated in an environment of uncertain multilateral trade framework. ANR and primary product marketing will be based on a proactive and industrial marketing strategy. The increase in the anticipated primary product exports including those arising from product differentiation and new product development and

uses embodying higher value-added will need new market niches, further market penetration and establishment of new markets.

Marketing is more than selling. The further entry into international market will need an efficient marketer strategy rather than that of a commodity trader to minimize the disadvantages of a price taker. Marketing must respond not only to price signals but also be sensitive to changing consumer preferences. It also involves the creation of new demands and uses, product innovation and differentiation, market segregation and market niches. The ANR marketing strategy will exploit the potential of existing trading blocks and preferential trading arrangements.

Domestic marketing of ANR products will emphasize product competitiveness and user orientation in order to increase effective demand and reduce dependence on imported products. In the context of an open economy, domestic ANR products, both fresh and processed will have to compete on price, quality, brand names and other related services with imported products, particularly for food items. Domestic marketing activities must therefore seek to provide consumers with high quality, well-packaged, effectively promoted, competitively priced, varied and reliable product supply. The strategy will emphasize increased changing consumer preferences and expanding consumption of local products through consumer education and promotion, improved marketing infrastructure and facilities, enhanced quality packaging and price competitiveness.

2.6.6 Expanded Food Production

The Gambia is a net importer of rice, the country's staple food, and all other basic food needs including raw materials for agro-based industries. The self-sufficiency rate for its staple rice food is about 17%. Beside the concern for this dismally low self-sufficiency level of the staple food, there is also increasing consciousness with nutritional and quality aspects of food.

Expansion of food production for both import substitution, domestic demand and export market present opportunities for increasing output and income in the ANR sector. The thrust will be on:

i. Implementation of a food policy emphasizing the expansion of domestic food production of more protein and high fibre food to increase consumption of higher protein-content food items and reduce starch and carbohydrates in both urban and rural households; and,
ii. In view of the importance of rice, fish, meat, fruits and vegetables in household consumption, their ready and local availability, accessibility and utilization will be important from food security point of view. The country possesses comparative advantage in the production of these items. Therefore, the food policy will aim at accelerated production of important food items.

The policy mix to support the foregoing efforts will include the following:

i. Temporary use of import duties and other promotional incentives to build up local productive capacities and, over the medium- and long-term, the industry's comparative advantage. A package of R&D, extension and other services will complement such efforts. This will include irrigation and drainage investments to facilitate increase in yield, make

possible use of other productivity augmenting inputs such as fertilizer and high yielding seed varieties and introduction of new farming technologies such as multiple-cropping for intensive land use. The expansion of double-cropping of irrigated rice and the provision of controlled drainage facilities for year-round production of short and long-term crops such as vegetables and fruits for both domestic food and export will call for further public and private investments. Private investment will be promoted for this purpose;

ii. Liberal foreign investment policy, including security of investment, to draw upon technology, expertise, capital and other market linkages to accelerate growth and overcome technological and other supply side constraints in the development of the industry. This will in particular, involve fish and fish products and, fruits and vegetables;

iii. Concerted and comprehensive long-term R&D agenda to identify and build-up indigenous technological possibilities for specified food items embodying local and foreign research capabilities; and,

iv. Expansion of land area for vegetables and fruits production. The Government will promote the orderly and sustainable development of fruits and vegetable including floriculture through the creation of Horticultural Development Authority.

2.6.7 Human Resource Development

Human resource development will be one of the key strategies to achieve increased productivity and output of labour and land. The emerging scarcity of land will render human resource development more pertinent in the context of meeting the over-arching objective of increased ANR output and maximization of food and income securities. It will provide the essential complement to the important areas of R&D, extension and marketing.

New technological processes and methods, equipment and new demands consequent to the globalization of the economy and issues related to sustainable development in the wake of climate change and conservation of biodiversity will require improved and new knowledge. Thus, there is a need to have a critical mass of adequately trained skilled manpower in the ANR sector. Accordingly, human resource development, especially in the areas of other shared resources sub-sectors, will require the formulation of a comprehensive plan to include manpower and other training needs for efficient agribusiness and resource management in primary production as well as in agro-based processing. This plan will inter-alia, focus on the following:

i. Defined targets which also identify the clienteles' for such development which will include the training needs for farmers, fisher folks, agro-based industries, entrepreneurs, marketers, researchers and extension officers. These targets will place special emphasis on the role of women in the above areas; and,

ii. Training syllabi will include ANR management aspects (value chain) including packaging and marketing, product quality control, health and sanitary requirement. This training will also include the training of cadres in leadership, management and organizational skills which are essential ingredients for social and institutional development and growth of such institutions in the ANR sector. The plan will also include a programme for the development of specialist skills and knowledge and, management/entrepreneurial capacities.

To realize the objective of the training programmes, the existing curriculum of ANR training institutions will be reviewed, improved and updated, and the production of teachers and trainers increased, involving both public and private sector initiatives. This will require the rationalization and consolidation of existing agency training institutions to economize on teaching faculty resources and other overheads.

2.6.8 Development of Viable and Self Reliant Farmers'/Fishermen's Institutions

Self-help, self-improvement and attitudinal change are at the core of the strength of commodity groups to spearhead innovations and active participation of farmers'/fishermen's associations and agro-based cooperatives in the modernization process of ANR development.

The 2017 – 2026 ANR policy will address their current constraints and propose an explicit programme for their long-term development. Despite their numerical strength under the Farmers' Platform, these organizations have a meagre capital base. This constraint together with the very limited managerial and technical capabilities severely limit their participation to only low risk-low return, small turnover and simple technology ventures such as supply of inputs and marketing of products and basically traditional agro-processing activities.

The ANR policy (2017 – 2026) will tackle the major constraints to the activities of farmers'/fishermen's institutions through mitigating the low capital base and lack of technical, managerial and expertise through the following measures:

a) **Formation of a Financial Institution:** There are two possible financial institutional options – an Agricultural Development Bank or a National Farmers'/Fishermen's Savings and Credit Union to effectively meet current and prospective credit needs of their members. More importantly, it will facilitate their entry and participation in the mainstream of economic development and growth including, in particular, in the manufacturing and services sectors. The functions of the proposed institution include:

i. A source of credit and channel of savings for the members of the associations;
ii. Performing the functions of a domestic financial centre; and,
iii. Carrying out banking activities for local marketing and agro-based processing activities of its clients including inter-alia the issuance of banker's acceptance, guarantees and letter of credit.

b) **Farmers'/Fishermen Institutions-Specific Human Resource Development Programme:** To meet the need of capable management and technical personnel to run the institutions on self-reliant and self-financing basis a short to medium-term specially tailored human resource development Programme will be needed. This programme will take cognisance of the need for attitudinal change, building up managerial and financial skills and knowledge for executives, staff and members in their relevant fields; and,

c) **To Strengthen the Farmers' Platform as a Federation of Commodity institutions:** Although existing commodity groups face some common problems, their amalgamation or consolidation into a single group is not what is being recommended here since they appear

to be individually working fairly well. Instead strengthening the Farmers' Platform is proposed to become a federation of all commodity organizations and associations with NACOFAG as its secretariat which will focus on the issues of:

i. Coordinating the socio-economic activities of the national level institutions;
ii. Provide centralized national information linkages for all groups;
iii. Interest articulation and national level representation; and,
iv. Establishing regional and international infrastructural and economic linkages with other national institutions.

2.7 SUB SECTORAL/ENTERPRISE POLICIES

2.7.1 Macro-Economic Policy

ANR sector is inevitably affected by macro-economic stabilization reform policy measures. There are four main macroeconomic policy instruments through which government will exert significant influence on the agricultural production environment. These are:

a) Price Support;
b) Marketing;
c) Input Supply; and,
d) Credit.

The ANR macro-economic related policy with respect to the four main policy instruments will be re-examined and re-directed to facilitate improved growth performance of the ANR sector through:

i. Exchange rate adjustment – will impose substantial movement towards a realistic exchange rate to reduce disincentives to export production.
ii. Producer prices – will remove illogicalities (especially bias against exports), and create a mechanism that will eliminate exploitation of producers and ensure that they receive fair prices for commodities.
iii. Input supply – will ensure that farmers have access to inputs such as fertilizers, seeds, pesticides etc, at affordable prices.
iv. Credit – will ensure adequate allocations to medium-scale farmers/operators, especially for procurement, marketing and processing.
v. Agricultural budgets – will increase budgetary allocations (capital and recurrent) to meet the needs of the sector in accordance with the Maputo Declaration (2002) of 10% of Government budgetary allocations.
vi. Basic rural services – will improve and expand coverage of health, education (including adult functional literacy), water and sanitation and rural infrastructure including electricity supply throughout the country.
vii. Research – will adopt the proposed Medium Term Plan for the National Agricultural Research Systems (NARS) of The Gambia and appropriately restructure existing institutions along the decentralized policy and establish technology, R&D facilities and effective linkage with extension workers and farmers.

2.7.2 Food and Cash Crop Policy

The main annual food crops grown in The Gambia include rice (the staple food), millet – both early and late, maize, sorghum, cowpea, groundnut, cassava and sweet potato. Groundnut, a food and cash crop is the Gambia's major export crop. The annual cash crops are groundnuts, sesame and cotton. The common policy strand which circumscribes all the two classes of annual crops will be one of a ''value-chain approach'' which will emphasize intensification of productivity and production by focusing on the following key policy threads:

i. timely production inputs supply and distribution;
ii. seed development and varietal improvement;
iii. pests and diseases management;
iv. post-harvest loss handling;
v. processing (value addition) and marketing; and
vi. climate smart agriculture techniques.

With particular reference to specific crop requirements the following policy actions will be adopted and implemented:

a) Annual Food Crops

Rice

Rice is cultivated in the upland rainfed, lowland and rainfed hydromorphic soils, mangrove swamps and in the tidal or pump irrigated lowland in all agro-ecologies (AEs). Increasing rice production and productivity in the irrigated lowland, the nerica-based uplands and swamp land ecosystems will be the main policy focus. The expansion of production in the former will be achieved through rehabilitation of abandoned areas, land development and irrigation infrastructure development while intensification of production will additionally be construction of access roads and the cultivation of short-duration rice varieties in the latter.

Millet

Early Millet is grown in all the agro-ecological zones (AEZs) early in the cropping season, and both late and early millet types respond to dry seeding prior to the onset of the rains. Policy actions will emphasize greater research review on fertilizer use efficiency (rate and time of application) on yield of the recently introduced early millet cultivars. Similar emphasize will be given to increase in late millet yield through ensuring timely access to and application of recommended rates of fertilizers.

Maize

In addition to screening for new and improved open-pollinated early maturing maize varieties with yield potential of between 3 and 4 tonnes/ha, such as those available from international agricultural research centres (IARCs), concerted policy actions in the light of climate change will focus on the introduction, development and dissemination of technologies for adoption of hybrid maize or even genetically modified (GM) maize to cater for all categories of farmers,

small-scale, medium-scale and large-scale commercial farmers and help increase production and productivity to meet its expanded use as poultry feed and flour for baking and porridge meal.

Sorghum

Sorghum has been a low priority crop for research in the country, however high yielding and good food quality dwarf sorghum cultivars have made significant impact in the cropping systems of countries with similar agro-ecologies. Sorghum also thrives well in areas where maize production is poor and risky. Thus, the use of 'innovations systems approaches' to research with sorghum as an indicator crop in Giroba Kunda in the Upper River Region will be consolidated with a view to expanding the cultivation of the crop in the region along with introducing improved varieties in the low rainfall area of a total annual rainfall of about 600 mm.

Cowpea

Cowpea is a food crop with high quality protein, a high value cash crop in the local market and a fodder for livestock. Currently National Agricultural Research Institute (NARI) is evaluating a good range of improved varieties of cowpea including 10 entries of cowpea extra-early maturing varieties; 20 entries of medium maturing varieties and 15 entries of dual purpose varieties. These efforts will be consolidated with a view to releasing successful varieties in the medium-term.

Soybean

The crop has had a long chequered history in The Gambian farming system. But a renewed interest in soybean emerged on account of its nutritional qualities as a good source of protein and oils. Although no variety has so far been released, a good number of varieties which are adaptable to a wide range of agro-ecologies in The Gambia have been screened and selected. Releasing these varieties will constitute an urgent medium-term policy action to improve nutritional security.

Cassava

The wide range of cassava products (by-products in flour, pasta, biscuits, starch) makes the crop a highly flexible component in a strategy for development aimed at generating food and rural household income. Almost all the improved cassava cultivars tested demonstrated high yields of 30 tonnes/ha to 40 tonnes/ha which contrast significantly with current local cassava (gari) yields of 4 tonnes/ha or 5 tonnes/ha. Potential for a threefold increase in yield of these exotic varieties with semi-intensive cultivation practices are achievable. Most of the improved cassava cultivars have not met consumer taste preferences and culinary expectations, except "Tokumbo" which cooks very well. Cassava tubers (roots) are highly perishable and must be processed into a storable form immediately after harvest. Thus, concerted policy actions in promoting expanded production will include the use of effective and simple machines and tools that reduce cost of labour, processing time and production losses.

Sweet potato

Sweet potato is the second most economically important root crop after cassava and an important food and cash crop in The Gambia. It is grown in upland and lowland ecosystems in all the AEZs, but extensively in the lowland "tandaco" ecosystem in a rice-potato relay cropping. Here the farmers, mostly women, are able to produce sweet potato crops twice in the year, during the rainy season and after a rice crop during the dry season, irrigated from shallow wells in these lowlands. It is cultivated primarily for domestic consumption and to some extent for cash in the peri-urban markets of Greater Banjul. It is relatively drought tolerant, takes 60-70 days to mature and does well in upland soils incorporated with organic manure to improve soil structure, moisture retention and fertility. Farmers have been able to grow and harvest three times in the year to meet market demands throughout the year. Therefore, promotion of widespread adoption of improved cultivars which have registered yields of up to 20 tonnes/ha will be a key extension policy action.

b) Annual cash crops

Groundnut

Groundnut continues to dominate the upland crop production system as cash crop for rural household income and food crop for protein supplement in the diet. The perennial low commercial purchase of groundnut by Gambia Groundnut Corporation (GGC) alludes to a need to re-organize both the production and marketing systems of groundnuts in the country. While the uncontrolled liberalization of the groundnut market with attendant poor quality groundnuts predisposes the country's exports to downgrading by our traditional importers with strict quarantine and quality control systems with regards to limits in aflatoxin content, the unguarded production processes equally predispose the local population to serious health hazards. Thus, the shot-term policy actions will include: wooing a private sector concern with the financial muscles to take up the groundnut marketing and processing complex and invest in making aflasafe soil pesticide readily available or enticing other private sector input suppliers to take up import and distribution of aflasafe in addition to other production inputs and the provision of good quality seed of a suitable variety to replace the seed stock and variety in circulation. Greater extension support will be assured to such a would-be private investor.

Cotton

Cotton had been the most widely grown cash crop to feed the local garment cottage industry and for export in Upper River Region (URR) and parts of Central River Region (CRR) up to the late 1980s. Subsequently the industry evolved through different investment and management arrangements which also established a cotton ginnery in Basse. Low production due to reduced cultivated area with no scope for expansion, lack of a market and the closure of the ginnery in the early 2010 made matters worse for the cotton farmers. However, given the well established tradition of cotton cultivation in the growing regions and sustained interest in its production, the need for revival of the industry and search for varieties with high ginning rate, good fibre length and adaptable to the realities of climate change in the long-term are mandatory. Recent upsurge in popularity of organic cotton production in most sub-saharan African countries, because it is safe, feasible, maintains soil fertility and provides higher returns on investment

than conventional inorganic fertilizer use in cotton production, has rendered these mandates more urgent. Thus, policy emphasis will, in the medium- to long-term, be focussed on the need to revive the industry along similar lines as its sister groundnut industry and varietal screening by The Gambian NARS.

Sesame

Sesame, a backyard crop for the medicinal value of its oil, became a commercial proposition with the intervention of the CRS and now the National Women Farmers' Association (NAWFA). It provides oil, food supplement, and cash income. As a short duration and drought tolerant crop, many farmers have adopted its cultivation. With the establishment of the Sesame Growers' Association, the crop found a niche market in Europe. Thus, key public policy concern will continue to emphasize intensive screening and selection of sesame varieties of high yield potential to mitigate and improve farm yields and support the efforts of NAWFA in its extensive sesame out-reach programme on processing and value addition of the crop for increased rural household income.

2.7.3 Seed Production System

A vibrant and dynamic seed industry is the corner stone of sustainable improved crop production system. It was in recognition of this fact that the then Department of State for Agriculture inaugurated a task force for the drafting of a National Seed Policy in 2007. Consistent with the policy recommendations of the task force, the ANR seed policy for the decade to come will rest on the informal seed sector of the country which hitherto has served as the main provider of seeds. The thrust of the policy actions will focus on enhancement of the role of farmer-based seed initiatives including on-farm seed selection and multiplication, community seed farms and village seed stores supported by technical efforts in improving the germplasm base of farmer-saved seeds, incorporation of relevant seed quality control elements into the informal seed sector practices and reduction of post-harvest losses and deterioration. In tandem with these processes, the fledging private sector seed growing farmers will be encouraged to progressively enhance their participation as seed providers to reduce the load on the ongoing public sector seed programme which will be maintained under the Ministry of Agriculture (MOA) through NARI.

The complexity of the functions of an effective and sustainable seed industry requires a well-defined and stable framework of stakeholders and actors to manage the key functions of research, seed multiplication and marketing to maintain a continuous flow of improved seed of high-quality crop varieties. In this regard, the ANR seed policy actions will focus on the development of the following elements:

i. The institutional structure to administer a vibrant seed industry will be established under the authority of MOA, comprising of a National Seed Council (NSC) with overall advisory responsibility for matters relating to seed policy, legislations and protocols as well as seed industry planning and implementation. NSC will be assisted by a Variety Release Committee (VRC). It will comprise of representatives of all key interest groups and institutions recommended by the taskforce;

ii. Crop research and variety development system which will be the NARS, represented by NARI, and will be adequately resourced to undertake crop improvement activities. The priority focus will be on groundnut, early millet, rice, maize, cowpea, sesame, sorghum, findi and horticultural crops of economic importance. The key functions in this regard will include:

- Variety adaptation and acceptance process to ensure that varieties to be used conform with agro-ecological dictates and meet the attributes desired by farmers, consumers and agro-industry, to be administered by NARI;
- Variety registration process to be administered by NSC on the advice of the VRC of varieties nominated for the purpose by the research system and other bodies engaged in the development of crop varieties following satisfactory fulfilment of adaptation and acceptance requirements ;
- Control of varieties and variety ownership by individual and institutional developers will be conferred by the NSC to make benefits that accrue from such varieties their bona fide properties;
- Farmers' rights which will recognize the immense contributions of farmers in the development and preservation of plant genetic resources and hence their right to use, exchange, share or sell their farm-saved seed between themselves without hindrance;
- Benefit sharing as an incentive to attract private sector participation will be provisioned by any would-be variety protection legislation ;
- Leadership in biotechnology promotion, support and application in a safe and sustainable manner for improved agriculture, social and economic welfare of the country will be vested in NARI;

iii. Seed production will include generation system of seed multiplication, early generation seed maintenance and supply and, certified seed production:

- The generation of seed multiplication will recognize breeder seed as the progeny of nucleus seed which will be produced by a breeder, foundation seed as the progeny of breeder seed will be produced by the seed technology unit (STU) of NARI, registered seed produced from foundation seed will be produced under general supervision of the breeder as well as certified seed produced from foundation or registered seed;
- Early generation seed maintenance and supply will be the responsibility of STU of NARI and will be freely allocated, at reasonable cost, to qualified private-sector agencies upon request in accordance with requirements for variety control in compliance with would-be Variety Protection Laws ;
- Certified seed production will be undertaken by specialized seed growers trained by STU; and,

iv. Seed conditioning to ensure the rapid, safe and efficient conversion of raw seed into clean and storable material, possessing the required attributes will be performed by both public and private sector agencies;

v. Seed quality assurance to ensure that high quality standards are developed and maintained for the industry will be designed by NARI through STU which will entail the definition of the rules and procedures and, quality assurance strategies consistent with guidelines established by the International Testing Association (ISTA) and seed standards of the Economic Commission of West African States (ECOWAS), will be adopted;

vi. Plant protection and quarantine measures will be applied at points of entry to prevent seeds and planting materials as well as soil contaminated with exotic pests and diseases, mites and extraneous materials from entering the country;

vii. Seed marketing and distribution systems will be developed by encouraging private sector initiatives in these functions, in line with efforts at the development of a private seed sector through: definition of basic principles to encourage financial institutions to provide financial support, provision of extension promotion, compilation of marketing data, development of a realistic pricing system, establishment of seed security stock, assisting importation of seeds of exotic crops as necessary and the provision of infrastructure to exploit the seed export potentials of farmers; and,

viii. Seed sector development will be rigorously supported in the magnitude as defined herein and as and when advised by the NSC to enable the private sector to assume a central role in seed supply through such incentives as:

- tax exemption, import and export privileges, guaranteed repatriation of profit for participating international companies etc. aimed at promoting investment in identified priority areas within existing investment laws;
- MOA will encourage and support relevant informal sector groups to develop their own practices with a view to assisting them to evolve into formal sector entities;
- Pursue acceptable arrangements to assure farmers of reasonable returns to their produce;
- Ensure adequate incentives and concessions and, timely availability of fertilizers and other farm inputs to enhance farm productivity;
- Draw on the benefits of international cooperation by associating with international organizations such as ISTA, International Union for Protection of New Varieties of Plants (UPOV), organization for Economic Cooperation and Development (OECD), African Seed Trade Association (AFSTA) etc., as soon as appropriate levels of seed quality control are met; and,
- Mobilizing necessary resources for capacity building of national institutions.

2.7.4 Gender and Youth Mainstreaming Policy

The problems faced by women and youths in agricultural production are immense, and include: limited access to land, credit, appropriate technologies, training and marketing. In the light of these constraints and consistent with the national commitments under the Convention on the Elimination of all forms of Discrimination Against Women (CEDAW), the gender mainstreaming policy strand will emphasize the following policy threads:

a) Land Tenure

i. There would be a thorough review of the land tenure system in The Gambia taking into consideration all the past studies on the tenure system.

ii. Legislation would be enforced to avail women full ownership of land, particularly land for development purposes. This will also enable them to use such land as collateral to secure loans from banks.

iii. The need to synchronize the various land tenure systems to address development needs regardless of gender is paramount to the economic use of resources and does not conflict with social justice.

b) Access to Credit

i. Organize female farmers into group savings and credit societies in order for them to safe on a periodic basis, and establish their own revolving fund. Establish a rural credit fund for agriculture targeting women and youth small farmers.
ii. NGOs would be encouraged to assist female farmers with revolving loans to enable them purchase farm inputs (fertilizers, seeds, and farm implements). Repayment could be done after harvest. Government would consider support and granting subventions to GWFA and WISDOM (being exclusively women NGOs) for this purpose.
iii. Revisit the interest rate on the commercial bank loans and set up a minimum interest rate for the poorest farmers particularly the women. This scheme would address the following areas: Increase women's financial strength to purchase more animals with feed, vaccines etc, for a more viable livestock project.
iv. Financially empower women to purchase seeds and farm implements for both food and cash crop production.
v. Support women in the fishing industry to bargain and purchase adequate fish for both smoking and drying with their own capital. This will require establishment and strengthening of female fish mongers groups/co-operatives for sustainability.

c) Appropriate Technologies for Female and Youth Farmers

i. Research and development programmes on appropriate farm technologies for women would be supported for all the different crops grown.
ii. Provide women and youths with credit to purchase implements to increase hectarage thus increase production.
iii. Train women and youths on the use of the tested and recommended technologies by the agricultural extension system.
iv. Embark on the IEC programmes that change the attitudes of female farmers on those beliefs that state that women should not own and keep assets.
v. NGOs in the agriculture and government extension services would harmonize their efforts and intensify the provision of more appropriate technologies such as dehulling, processing equipment for grains to alleviate the arduous workload of women.

d) Reliable Sources of Water

i. Develop a policy accompanied by an action plan to provide reliable sources of water for agricultural projects through the exploitation of the deep sandstone aquifer water resources using appropriate renewable energy technologies.
ii. NGOs active in the area of agriculture, especially horticulture would be encouraged to embark on more water projects not only for consumption but also for agricultural purposes.
iii. Schemes such as the then irrigated water systems in the Western Division namely in Banjulinding, Sukuta and Kafuta would be reintroduced for organized women's groups.

e) Training

i. Involve more women and youths in the annual Agricultural Farmer Training conducted at the mixed farming centres and other relevant places.

ii. Organize and train women to form self-managed (kafo) groups to take up the negotiations of their own market prices in the areas of horticulture, fisheries, food and crop production. This will build more confidence in women and ensure sustainability. The sociological and managerial aspects of kafos are important here and will be a focus based on carefully selected strategies.
iii. The provision of appropriate techniques should go along with a training package for use by women so that the equipment will not end in the hands of their male partners.
iv. To ensure the availability of food for all year round, especially vegetables and fruits, food preservation and processing are very necessary. This is an area where women are lagging behind and would be given urgent attention to attain self-sufficiency. The Department of Food Technology Services (DFTS) of DOA has done several pilot studies/programmes in this area, which would be expanded and intensified.
v. Organize and train female farmers to produce quality food and also to prepare and consume the required foods for a nutritional purpose and balance diet. An action plan which eloquently ties local production to home consumption demands/trend would be elaborated for all the sub-sectors.

f) Marketing

i. Private sector involvement in marketing of agricultural produce will be further encouraged. Government concessions and well thought-out marketing incentive packages will be provided for the private sector to help in this regard.
ii. Women will be encouraged to form marketing groups to bargain for their price. The co-operatives and agricultural extension systems will be instrumental in this regard. Although the concerned extensionists will have to be given gender sensitivity orientation sessions.
iii. Women will be linked to potential buyers through an out-growers' scheme with commercial producers. This would involve the playing of pro-active roles by the individual extensionists in complying with the production and marketing plans of the commercial producers.
iv. Market information and pricing indicators will be provided to women in the best and appropriate languages they could understand at all time. This should be a joint effort between the government and NGOs. The DPS will be strengthened with a view to having a unit specializing in the timely provision of such market information (appropriately desegregated by gender) for horticulture and allied sectors.

2.7.5 Livestock and Range Management Sub-Sector Policy

The need to satisfy the increased demand for animal products and to ease pressure on natural resources imposed by animals will require adoption of an intensification approach to livestock development including health and welfare aspects. Successful approaches to intensification of livestock production have already been tried in the Gambia. They include ram fattening schemes and the establishment of compost pens for improved meat, milk, manure productions and work. Thus, these activities and their needed technical, financial and institutional support for their widespread dissemination will constitute the core of the sub-sector policy strand for the 2017/2026 ANR policy. In terms of specific livestock species, this core policy strand of the sub-sector will be pursued through the following management systems' policy threads:

a) Cattle Production Systems

Intensification of the cattle management systems will be through the development of a peri-urban dairy industry to boost domestic milk production in order to meet the growing demand for dairy products in expanding urban centres.

b) Small Ruminant Production Systems

Traditional small ruminant production system is extensive in nature, and management of animals differ for the rainy and dry seasons. In contrast to cattle, income gained from the sale of small ruminants is mainly managed and utilized by women owners. These systems will be intensified through the establishment of improved small ruminant production systems with the use of supplementary feeds such as millet and bran, as well as drinking water provision and, a donor assisted semi-annual routine vaccination programme for six years to eradicate peste des petits ruminants (PPR) and pasteurellosis of sheep for organized women groups to carter for the Eid Ul Adha festival.

c) Poultry Production Systems

Traditional poultry production is extensive in nature, as flocks are poorly housed and fed. It is also characterized by small-sized flocks, which in most cases are owned and managed by women and children and only confined during the night in kitchens or locally-made hen coops to minimize predation. These systems will be intensified through the establishment of improved poultry production systems with the use of supplementary feeds such as millet and bran, as well as drinking water provision. Similarly small- to medium-scale commercial poultry farms located in the peri-urban area for broilers and table eggs will be intensified through access to day-old chicks, finance, feed, affordable energy supply and management advisory services.

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d) Horses and Donkeys Management Systems

Horses and donkeys contribute significantly to the economy by providing draught power for cultivation of crops and transportation of goods. They are utilized for seeding and weeding, and for harvesting in the case of groundnuts. Unlike horses, donkeys are usually tethered only during the rainy season, and they are left to roam after crop harvesting, scavenging for feed in the vicinity of the village. Donkeys are not properly housed and groundnut hay is given to them only with the approach of the rainy season. These management systems will be intensified through the provision of suitable housing and supplementary feeding.

e) Pig management system

Traditional pig production is extensive in nature, and piggeries are mainly backyard operations. In many areas, animals are left to scavenge around the village, but limited supplementation in the form of household leftovers, groundnut cake, sesame cake, millet bran, rice bran and brewers' grain are occasionally provided. Thus, the policy emphasis of the industry will be the need to adjust to the strict requirements for pollution control and maintenance of environmental standards by adoption of the management system of small-scale pig farms

established in Abuko and Marakisa in West Coast Region in which the animals are properly housed and fed with agro-industrial by-products.

f) Other Livestock Species Production Systems

A number of poultry and other species are increasingly being raised by farmers for supplementing income and diet of the families. They include ducks, turkeys, guinea fowls and rabbits. In addition to scavenging, the management of these species will be intensified through promotion of the use of supplementary feeds in the form of bran and millet and the provision of suitable housing during the night to protect them from predators.

g) Apiculture Production Systems

The ability of tropical bees to feed themselves makes apiculture an essential livelihood for income generation, food and employment creation for rural and vulnerable poor farmers. Traditional beekeeping is an off season activity practiced by low income earners in the countryside characterized by the use of locally made grass or basket hives by individual farmers. To exploit the full potentials of the bee industry, there is the need for sensitization, investment, promotion of the use of suitable and standard modern beekeeping materials and to build the capacity of Department of Livestock Services (DLS) to provide the necessary husbandry and veterinary services for the sector.

In line with the livestock Sector Review (1991) the following policy threads constitute the overall sub-sector policy strand:

i. ANR financial institutions will be encouraged to give priority considerations in the allocation of their resources for loan for the provision of veterinary-products including drugs, vaccines and feed supplements – to leading companies in the importation and distribution of veterinary products;
ii. Continuation of the ongoing process of disengagement from direct livestock production activities including marketing to facilitate active private sector participation in the development of the sub-sector;
iii. Actively identify and collaborate with interested donors to establish a Livestock Development Fund to ensure the provision of requisite financial support for development of the livestock industry on a more sustainable basis.
iv. Develop legal instruments to ensure the transfer of 60 percent of the revenue collected from cattle tax (collected by the Ministry of Local Government and Lands) to the proposed Livestock Development Fund to enhance the development of the sub-sector.
v. Enforce the Livestock Marketing Bill 2005, in order to encourage increased and effective private sector participation in marketing operations including exports thereby contributing to increased off-take. The necessary legal (regulatory) instrument pertaining to livestock trade in accordance with internationally accepted standards (OIE Zoo-Sanitary/Animal Health Code) will also be reviewed and up-dated.
vi. Increase support to women livestock owners by according priority to development for small ruminants, poultry and dairy processing activities to ensure the gainful utilization of their

valuable livestock assets as a means of improving their socio-economic status and alleviating poverty.

vii. Designate and prepare legal instrument and provide facilities and necessary support services to the sub-sector to ensure the development of peri-urban dairy industry based on cautious introduction of exotic breeds in West Coast Region in particular.

viii. The GAM/86/006 – Integrated Rangeland and Livestock Development Project in Niamina Dankunku and Niamina West District will be adopted and rolled-out nationally as an approach for community management of traditional grazing lands on a sustainable basis.

ix. In addition to the foregoing short- to medium-term policy actions to intensify livestock production systems the supportive R & D policy will emphasize the following long-term intensification issues:

- Improvement of the feeding systems for cattle, small ruminants, pigs and poultry by increasing availability of high quality forage, conserving and feeding value of cereal crop residues;
- Improvement of genetic potential of local species (cattle, small ruminants, pigs and poultry) through improved selection (open nucleus breeding systems), cross-breeding and importing exotic genetic material; and;
- Analysis of technical feasibility and financial profitability of intensification of enterprises so that husbandry practices needed to advance the industry can be formulated for dissemination by the extension services.

2.7.6 Feed Production System

The tripartite inter-phase of crop/livestock/agro-industry is integration mechanism of these three sub-sectors. The continued growth and expansion of the livestock industry will depend on the availability of quality, reliable and cheap supply of animal feed and feed supplements since the proportion of feed in the production costs is fairly substantial. Thus, further efforts in diversifying the rudimentary feed industry will be undertaken to sustain the comparative and competitive advantage in the production of non-ruminant meat, eggs and milk for domestic consumption as well as for expanded export. This will increase the utilization of agro-industry by-products and reduce the reliance on imported feeds.

Concerted efforts to source locally some of the imported feed ingredients on commercial basis will be encouraged. This programme will include, in particular, grain maize and tapioca, soybean, rice bran, fish meal, cashew meal, groundnut cake etc. R & D efforts by both the public and private sectors including those implemented through pilot projects will feature prominently in the local sourcing programme which will inter-alia include:

i. Further commercial trials in maize cultivation in selected traditional maize growing areas of the country;

ii. Substitution of the grain maize component in animal feed (up to 40%) with cassava pellet and refuse supported by further in-depth studies in the cultivation of existing high yielding varieties;

iii. Attempt to obtain high yielding varieties of soybean for commercial production to complement efforts towards import substitution;

iv. Concerted efforts towards the improvement of the various bran currently in use and fish meal through defatting process for the former; and,
v. Further efforts towards diversifying the feed base which will include the exploitation of agro-industrial by-products, crop and animal residues including local forage plants. R & D in these areas will be expended and intensified by both the public and private sectors.

2.7.7 ANR Institutions/Services Policy

ANR institution/services policy will be based on principles of decentralization, privatization, divestiture and people's empowerment and will include:

i. Liberalisation of the ANR inputs and machinery markets;
ii. Develop a manpower development plan for each sub-sector;
iii. Actively encourage and promote the establishment of agro-industries such as canning of local fruits, drinks, vegetables and the production of fast food versions of local coarse grains;
iv. Implement the Research Master Plan and appropriately reform the ANR service institutions within the Local Government Reform and Decentralization Framework to make them more results-oriented;
v. Actively promote and encourage private sector participation in the sector and draw up an incentive package for investors including increased funding for agricultural services of public goods nature; and,
vi. Emphasize projects in traditional food crops, fruits, vegetables and fish and livestock to expand their production.

2.7.8 Forestry Policy

The country has lost more than 50% of the forest cover between 1946 and 2005. However, the projections to 2015 show a lower rate of degradation, which could be attributed to the interventions in implementing a more aggressive forestry policy. Thus, the policy strand of the sub-sector for the period 2017/2026 will be improving and maintaining forest resources through greater involvement of the local communities in the effective management of existing natural forest cover.

The specific forest policy goal will continue to be the development of 30% of the total land area into forest, of which 75% will be under community and private sector management to increase the forest resource base through forest rehabilitation and the establishment of fast growing tree plantations and woodlots to cater for domestic wood products need and non-wood products including biological diversity and habitat for wildlife. This will primarily be achieved through the implementation of the Gambia Forest Management Concept (GFMC) and educating the public on the importance of forest resources. The GFMC has three variances of active community participation in forest management: Community Forest Management (CFM), Community Controlled State Forest Management (CCSFM) and Joint Forest Park Management (JFPM) concepts. As at date forests of 70 communities totaling 7113.28 ha have been demarcated, forests of 50 communities totaling 6867.76 ha are at preliminary CFM agreement stage and forests of 214 communities totaling 17,701.28 ha at CFM agreement stage **(Annex Table 1.11)**. In parallel with consolidating and expanding the CFM area coverage to achieve the foregoing

specific sub-sector goal, the following policy threads will be adopted to implement the overall forestry policy strand:

i. Promotion and adoption of appropriate agro-forestry systems and enrichment planting of the existing forest reserves;
ii. Maintain the health, vitality and integrity of forest and woodland ecosystems through enrichment planting with suitably identified plant species;
iii. Maintain and improve the productive functions of forest and woodland ecosystems through enrichment planting of selected tree species;
iv. Develop and adopt a sound management plan based on sustainable forest management principles as the framework for community involvement in forest management;
v. Establishment and equipping regional and/or community level nurseries for production of appropriate tree species for enrichment planting;
vi. Train villagers in tree nursery attendance, budding and grafting techniques, methods of transplanting tree seedlings and forestry management principles;
vii. Provision of wells fitted with appropriate water lifting devices at the regional and/or community level nurseries;
viii. Equipping each of the participating communities/villages with patrol and bush-fire fighting equipment.
ix. Rationalize and strengthen the institutional capacities of forestry institutions to support an accelerated sustainable management of flora resources through appropriate research, development and promotion programmes;
x. Ensure effective application of protection and conservation measures through popular participation in the implementation, monitoring, regulating and enforcement;
xi. Developing renewable and alternative fuel wood substitutes that would compete with and or replace fuel wood and wood charcoal in terms of performance and acceptability and limit the production of these energy resources to established Community Forests;
xii. Implementing the desertification programme and action plan; and,
xiii. Develop, establish and operate Desertification Trust Funds.

2.7.9 Parks and Wildlife Policy

Primarily a natural resource base economy, biological diversity provides the basis for survival of the population and socio-economic development of the country. Due to their protected status parks and wildlife ecosystems are relatively the richest biodiversity ecosystems and, in light of deepening poverty, they are therefore, highly prone to human depredation. Thus, by the very nature of the deep-seated extant constraints to the development of the parks and wildlife sub-sector as being anthropogenic, the policy strand of the sub-sector for the period 2017/2026 will be addressing the underlying causes of biodiversity loss through greater and systematic involvement of the population, in particular satellite local communities, in their effective management.

The specific Parks and Wildlife policy goal will continue to be the expansion of protected area coverage to 10% of total surface area of the Gambia. Currently 76,064 hectares, approximately 7.27% of the total surface area of the country as noted in sub-section 1.2.4 above. Only 0.16% of the terrestrial and inland water is protected while 7.11% of the marine and coastal areas are under formal protection. The Department of Parks and Wildlife Management is currently

implementing a strategic plan (2011-2020) of 20 global and national biodiversity conservation targets each through a series of well defined implementation strategies. Thus, in parallel with implementing these strategies to achieve the foregoing specific sub-sector goal, the following policy elements will be adopted to implement the overall parks and wildlife policy strand:

i. Develop and adopt a sound management plan, including perimeter fencing and income generating activities, based on sustainable management principles as the framework for community involvement in protected area management;
ii. Equipping group of the participating satellite communities/villages with patrol and bush-fire fighting equipment.
iii. Rationalize and strengthen the institutional capacities of biodiversity institutions to support an accelerated sustainable management of fauna and flora resources through appropriate research, development and promotion programmes;
iv. Ensure effective application of protection and conservation measures through popular participation in the implementation, monitoring, regulating and enforcement;
v. Implementing the biodiversity strategy and action plan as relevant; and,
vi. Develop, establish and operate Wildlife Trust Fund.

2.7.10 Marketing Policy

The agricultural commodity marketing policy will be based on the principle of totally liberalized input/output commodity markets with public sector involvement strictly limited to regulatory functions, provision of marketing infrastructure and services of public goods nature and implementation of supportive macroeconomic policy as defined in 2.7.1 above.

2.7.11 Food Security Policy

The food security policy will be enhanced availability through increased domestic production particularly of nutritious and safe food described in 2.7.2 a) above, improved access through the promotion of viable farm and off-farm income generating activities and enhanced stability of supplies through effective processing, storage and food reserve mechanisms.

2.7.12 Horticulture Sub-Sector Policy

The horticulture sub-sector policy will be the promotion of high-valued crops through the development of private sector horticultural enterprises and small-scale out-growers schemes to meet the increasing domestic demand and export market opportunities. The revival of the dormant GAMHOPE will be encouraged and facilitated. The implementation of these policy actions will be enhanced through the strengthening of horticultural advisory/extension and research services and the establishment of a National Horticultural Development Authority (NHDA) to promote increased horticultural exports through aggressive horticultural export and investment promotion strategy to develop markets, storage and processing infrastructure and ensure quality control.

National Horticultural Development Authority

In the long-term the creation of an authority will be pursued. The main objectives of establishing the National Horticultural Development Authority is to provide organized production and marketing systems for horticultural crops mainly produced by small growers especially women. It will be established by an Act of the National Assembly. The Authority's policy formulation will be vested in a Board of Directors with a General Manager as Chief Executive responsible for the implementation of the Authority's policy and the day-to-day operations. It would operate on commercial lines and in competition with the private sector operators.

The envisaged institutional rationalization policy will translate into the expected growth performance of the sub-sector through the following commodity group-specific/production system policies:

a) Olericulture Production System

The production of vegetables will be intensified through all year round production by adopting double-cropping system using suitable rain season varieties and provision of copious water supply systems for dry season irrigation. There will be substantial expansion of area under vegetables and this will involve suitable lowlands and uplands. The exploitation of growth potentials from local and export demand will involve the development of improved post-harvest and harvest handling technologies, increasing shelf-life and enhancing product presentation. With increasing consumers awareness about the consumption of health and nutritional foods, the production of 'chemical-free' vegetables will be further encouraged through organic agriculture and minimize chemical based pest and quality control.

The cultivation of vegetables will be further encouraged and promoted. At present high proportion of imports composes of onions, tomatoes, vegetable cooking oils and edible vegetables whose local production is currently well known. The CIF value of imports of edible vegetables and certain roots & tubers only, excluding onions and tomatoes, grew from D36.362 million in 2000 to D157.875 million in 2015 **(Annex Table 9b),** reflecting the extent of the market for an urgent import substitution policy. Thus, R&D efforts will be intensified for the development of varieties with good properties which are of market acceptance, utilizing cost-effective methods.

b) Pomology Production System

Consumption trend of fruits of various kinds in the country is fairly high and likely to continue. CIF value of imports of edible fruit, nuts, peel of citrus fruit & melons grew from D2.609 million in 2000 to D16.196 million in 2015 **(Annex Table 9b)**. There is also a strong and expanding demand for tropical fruits in the international market and this trend also is likely to continue although fruit marketing will likely be more competitive. The production of fruits will take account of the supply side constraints such as copious water supply systems. It will be more focussed, prioritized and concentrating on proven varieties that are of high commercial value and market potential such as mangoes, bananas, oranges, water melons, cashew, and paw-paws. The expansion of fruit on a commercial basis will be underpinned by the following efforts:

i. Promotion of the production of fruits with consistent grades and standards on a commercial scale among both private small commercial gardens and individual small growers;
ii. Identification and the enhancement of fruit production with potentials for further processing. The production of juice and concentrates of local fruit origin will feature prominently and the local utilization of such products will be further promoted as there is a growing demand in both the domestic and export markets – some of the fruits with such potentials are well known among currently subsistence women producers;
iii. Intensification of R&D efforts in areas of production, processing and product development. The development of quality clones and marketable varieties suitable for fresh consumption and processing needs will be emphasized. Efforts as regard to development of an integrated technology package for pest-control, harvesting, handling and transportation of fruits including minimizing perishability and increasing shelf-life will be further focussed;
iv. Further research and investigation into improved and efficient modes of transportation, handling and storage facilities; and,
v. Up-grading of farm management and agronomic practices among smallholders through specialist extension and training services.

c) Floriculture Production System

Albeit a highly capital intensive enterprise, floriculture is also of high lucrative investment proposal. Commercial production of flowers existed in The Gambia as recent as 1993 with then three active farms in the business with affiliated European farms in the United Kingdom supported by Commonwealth Secretariat and International Finance Corporation (IFC). The increasing demand for flowers is expected to continue through the next decade. The following specific policies will underlie the thrust for the development of floriculture production system:

i. Identification and adoption for production of high value-added varieties. Concentration of year round production of temperate flowers will enable the industry to take advantage of such flowers in the Western Hemisphere. Guidelines and regulations on soil control, soil conservation and environmental protection will be formulated and strictly enforced for the prevention of adverse environmental effects;
ii. Efficient supply of planting materials, consistent in quality and standards. Tissue culture industry spearheaded by NHDA will be established with interested donor support to meet most of these needs and patent right protection will complement this effort;
iii. Paramount need for intensified R & D to develop new and better varieties having commercial value and market potential. Other areas of R & D focus will include the development of cost-effective production technology, post-harvest handling and management of soil borne pathogens; and,
iv. Wooing for increased foreign investments in specialized areas of floriculture such as in temperate flower cultivation and handing to facilitate international marketing.

2.7.13 Fisheries Sub-Sector Policy

The overall sub-sector policy strand will aim at optimizing value-added, improved export earnings, greater employment opportunities and enhanced contribution to improved nutritional status consistent with the rational exploitation of the resource base. Thus, the policy will place high priority on biological studies, aquaculture, gear technology development, fish product

development and quality control, as these are considered fundamental and bear on the rational development and management of the resources. Thus, the following production system-specific policy emphasises will be adopted:

a) Aquaculture Production System

Although there are good potentials, aquaculture development has until recently received little attention. Hence, the fisheries resources can no longer sustain the fish supply probably due to demand from the increasing population as well as climate change coupled with high fishing pressure. It has been therefore, the aim of government to pursue aquaculture development for a variety of obvious reasons including: the creation of gainful employment to supplement the income of rural people; provide additional fish protein to supplement the diet; and to reduce the pressure on the capture fisheries Thus, the enormous potential for aquaculture development in terms of land, water and labour, which could potentially off-set fishing pressure on the capture fishery and provide additional sources of animal protein for improved nutrition and also supplementary income for rural people and commercialization, will be rigorously exploited through facilitation of access to requisite funds, equipment, technical expertise and support to conduct the relevant and appropriate research activities.

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b) Artisanal fisheries Production System

The policy will aim to incorporate the scope for quality assurance and the improvement of fish handling and storage facilities, particularly with respect to use of ice and insulated containers to improve product quality in artisanal fisheries. Post-harvest fish losses resulting in economic losses are regrettable. Also the development of new and improved fishing gear and techniques for exploitation of fish crustaceans other than shrimp (e.g., blue crab and lobsters) is vital. This will also include exploitation of the abundant pelagics for increased economic and nutritional gains, as it is expected that it will soon become necessary to reduce fishing pressure on the highly targeted demersal species.

c) Industrial Fisheries Production System

The policy will aim at the development of technologies for utilization of by-catch of industrial shrimp trawlers, fish offal and excess landings, especially of bonga and other pelagics, to manufacture animal feed and further limit post-harvest fish losses and waste is considered essential. In the light of diminishing demersal stocks an important policy will be limiting their level of exploitation by industrial vessels.

The overall sub-sector policy strand will be implemented through the following policy measures:

i. Strengthen the institutional capacity of the Fisheries Department and private sector stakeholders in terms of manpower, organizational and infrastructural development;
ii. Improve the production and marketing environment through the development of fisheries infrastructural facilities including fishing ports, ice plants, freezing, and cold storage, coastal fisheries centres, fish markets and road network and enforcement of the requirement that all licensed fishing vessels land all or part of their fish catches in the Gambia;

iii. Ensure rational exploitation through regulatory mechanisms, licensing fishing vessels, bilateral and multilateral fisheries agreements, surveillance activities and adopting appropriate resource harvesting methods and techniques;
iv. Facilitate increased private sector entry through the provision of credit facilities for the establishment of package manufacturing industries, viable fish processing establishments and setting up appropriate handling facilities for meeting the current national and international standards; and,
v. Enforcing a ''close season'' or total ban on fishing in fish spawning grounds.

2.7.14 Agricultural Mechanisation Policy

The agricultural mechanization policy will be animal traction as the most appropriate immediate advance from hand tools followed by 2-Wheeled tractors and limited and selective application of 4-Wheel tractors. This mechanization policy strand will be implemented through the following policy elements:

i. Re-structuring the Department of Agricultural Engineering Services (DAES) and leaving it under NARI. Effective conduct of the Services' R&D activities in this option requires a re-definition of the Unit's functions and recognition (by the NARI administration) of the fact that the Services' main function of R&D in agricultural mechanization is high priority area that deserves equal attention as the other research programmes and not a supportive activity. The administration must be quite decisive about this function and ensure that they provide the Services with the necessary support to implement its mandate effectively;
ii Actively seek local donor and non-governmental organizations and other countries, including Senegal, for collaboration issue including technology testing and adaption at the level of national research and extension programmes, private business, development organizations and individual farmers;
iii. Use of draught-power on research stations for field operations, primary crop processing, transportation, water lifting and irrigation to demonstrate national commitment to the effective use of the technologies as the prime national mechanization policy choice;
iv. Promote local manufacturing of equipment through private sector joint-venture approach (Gambian/foreign) to such enterprises; and,
v. Develop and implement appropriate complementary policies such as land tenure system, provision of credit facilities, design of donor funded projects and standardization of mechanical equipment.

2.7.15 Environmental Management Policy

The environmental management policy will be based on sound partnership among the farming community, the private and public sectors in the integration of ANR production systems (through mixed farming, agro-pastoral and agro-sylvo-pastoral techniques) and effective implementation of the Gambia Environmental Action Plan (GEAP) through the strengthening of its institutional structures, enforcement of its legal provisions and adequate budgetary allocations. As an integral part of the public environment policy concern the following policy elements will be enforced:

i. Mainstreaming/incorporation of climate change aspects into the policy documents including sectoral and sub-sectoral acts, programmes, projects and strategies;
ii. Creation of Local conventions on natural resource management (three conventions had been developed in the districts of Nianija, Niamina East and Kiang West during the PROGEBE Project) in collaboration with the Department of Livestock Services;
iii. Ensure judicious and proper management of agricultural chemical (pesticides and fertilizers);
iv. Ensure that all projects undertake Environmental and Social Impact Assessment/ESMP & ESIA as a condition for approval by the National Assembly;
v. Ensure adoption of improved fish curing kilns to minimize degradation resulting from fish curing using fuel wood for smoking which degenerates coastal forests (woodlots and mangroves vegetation); and,
vi. Ensure adoption of improved fish curing kilns to minimize health hazards posed by using smoke to processors.

2.7.16 Land and Water Use Policy

Given the primacy of water to life on earth and its nurture and sustenance, the common core public policy for the two sub-sectors will be an integrated water resource management (IWRM) approach which falls within the first key strategy of the 2017/2026 ANR policy - optimizing resource use. In anticipation of the need for an effective instrument for the implementation of an all-embracing water policy, the Ministry of Environment, Climate Change, Water Resource and Parks & Wildlife (MECCWRPW) conducted a national water resources assessment and management strategy with a view to formulate a strategic plan for the purpose. Accordingly this strategic plan defined seven strategic areas: legal and institutional transformation; water information and knowledge; water resource development and monitoring; climate change implication and monitoring; trans-boundary water sharing and collaboration; stakeholder awareness and participation; and, human resource development, as the framework for water resources development and management.

The strategic plan further elaborated the following water demand management and supply efficiency activities which will constitute the elements of our common core policy of land and water use in the next decade:

i. Supply- and demand-side water resource management which will focus on developing new supplies and infrastructure to meet perceived water needs. Given the 'water demand gap' between the projected water demand over the next two and half decades and present water supply infrastructure, this gap will be met not only from the construction of new sources of supply, but also through implementation of a targeted program aimed at introducing a range of *water* conservation and water demand management measures to reduce the perceived water requirements.
ii. Introduction of a water demand management (WDM) programme which will aim at the involvement of all water users in water conservation by sensitizing the population on the importance of conserving water through public education and awareness raising campaign. Such a campaign will deploy the use of NGOs, schools and colleges of education as well as the media (newspapers, radio and television) as its key communication channels to enlist

public support for the cause. Successfully applied technologies, educational and public awareness measures as well as other instruments of economic and regulative nature of such a holistic water conservation and demand management programme are already in use in different settings in many parts of the world.

iii. Water demand management measures will include various methodologies of managing water demands which are grouped in terms of the intervention being sought into technical measures; public awareness education; and water pricing and regulative measures.

The technical measures – these will inclue:

- use of water efficient devices in buildings which will necessitate a review of the Building code and regulations to include such a provision for all new buildings and retro-fitting of fixtures in all existing buildings ;
- Promotion of use of water-wise gardening and landscaping practices and encouragement of architects, planners and land scapers to create more efficient designs;
- Rainwater harvesting for households and institutions will entail installation of roof attachment systems as back-up and supplementary supply for public buildings which will also be considered for inclusion in a revised Building code and regulation for all new buildings;
- Adoption of re-use of 'grey' water and recycling of wastewater through reclaiming the water by restoring it to its original quality and using the treated wastewater for purposes which do not necessarily require quality standard of potable water. A caviate here is the possibility of attitudinal obsecurence among consumers towards wastewater effluents. This will require intensive public educational efforts to convince individual households and the general public of the advantages of adopting a lifestyle of re-using their 'grey' kitchen water and other rinsing water for purposes of watering plants and vegetable gardens. There is a number of relatively inexpensive commercially available technical gadgets to intercept and direct the 'grey' water flow. In the case of larger institutions, like hotels and lodges, not attached to water-borne sewerage systems, a revised Building Code will provide for the introduction of reed-bed/pond ('constructed wetland') purification structures to facilitate safe use of wastewater especially for external use of watering gardens and grass fields (golf courses) which are currently in use in some large tourist lodges and resort areas.

Public awareness raising and education – these will entail:

- The creation of awareness among water users, administrators and politicians for the need to conserve water in a more prudent manner;
- Incorporation of water conservation issues in educational material and in curricula;
- The production of appropriate learning materials for formal and non-formal education;
- The development of school/learner activities, e.g. demonstration projects, school competitions, award programmes and drama venues;
- The production of brochures, leaflets and posters to advocate the use of water efficient devices and water conservation practices in general;
- Calculated promotional efforts to sensitize the public through the media, i.e. newspapers, radio and television;
- The commemoration of special events like the World Water Day affords a powerful platform to spread messages;
- Institution of customer advisory services on the efficient use of water at household level, in gardens etc.;
- Backing-up publications and discussions with demonstration projects; and,

- Conduct of water audits and provision of technical information on water saving methods industries by specialist staff from DWR, NAWEC or elsewhere on gratis.

Water pricing and regulative measures – these will involve:

- Adoption of an appropriate pricing policy which recognizes the role of water charges and subsidies as instruments in promoting a sustainable water supply. A prudent policy in this regard will be total costs recovery to make the water services financially self-sustaining and independent of public subsidies. It will also serve as a demand management meaasure to influence the quantities of water resources supplied and used; and,
- Introduction of an abstraction permit system to provide a long-term water demand management measure which also will be a subject in the proposed new water legislation.

iv. Efficiency and productivity improvements will include efforts to reduce 'unaccounted-for water' (UfW) resulting from old and expanded piped water supply systems as well as measures to lower the utility's 'own' water consumption. These activities will be supported with proper information dissemination to the customers such as industrial/commercial and irrigated agriculture sectors, and the public at large on water conservation issues and their importance on the agenda of the utility. Since all potable water and much of the horticultural irrigation requirements are met from groundwater abstractions, the design of boreholes will be important consideration in improving optimal water productivity. Thus, boreholes and groundwater abstraction systems will be based on state-of-the-art hydrogeological assessment methods, efficient borehole sitting techniques as well as proper design, construction and development of the boreholes. The drilling depth will be sufficient to penetrate the water yielding zones and to accommodate the seasonal fluctuation of the water level even in very dry years, including the drawdown caused by the pump. Decision about the use of a new borehole for production and the operational yield will be based on proper pumping tests as well as the long- and short-term hydraulic behaviour of the aquifer and the borehole to avoid future over-pumping with resulting clogging of borehole screens and subsequent increased draw-downs. In this regard future groundwater abstractions will rely on larger diameter boreholes to obtain the required amount of water and also longer pumping mains to bring the groundwater from the well-fields to the point of utilization. New boreholes will not be sunk below 2 km from the coastline and in the vicinity of flood plains of the Gambia River and its tributary network, where salt- and brackish water persists.

v. Physical measures towards water reduction will, inter-alia, entail documentation of water conservation targeted on an individual basis, and applicable to The Gambia since in many instances, the shortage of water experienced at destination is not as much due to actual supply shortage as it is due to inefficient individual plumbing systems, corroded pipes and fittings and numerous bends in the plumbing system.

vi. Non-conventional water sources desalination and artificial recharge of groundwater aquifers. The former, desalination for portable water is, despite advances in membrane technology, still expensive and impractical on a large scale. The latter is an ideal and advanced solution to practice conjunctive use of surface water and groundwater and an opportunity to enhance the efficiency in the utilization of existing supply sources. Thus, R & D efforts will investigate actual storage capacity available within the aquifers, location of suited artificial recharge sites and recovery rates to be expected on retrieval to establish the feasibility and viability of this option in The Gambia.

vii. Rainwater harnessing for agricultural use is one of the priority areas for investment in the GNAIP referred to as 'water for productive use'. Since the technique is currently in use, it

will be expanded for increased food security, increased farm income and expanded livestock rearing considerations in tandem with the following policy elements:

- In the medium-term limiting surface water irrigation to the development of tidal irrigation facilities;
- Exploitation of deep sand stone aquifer water resources and management of rain and soil resources through watershed management and rain water harvesting techniques; and,
- Promoting wider adoption of conservation farming techniques.

2.8 DOWNSTREAM DEVELOPMENT

The integration of ANR sector with manufacturing sector will be instrumental in creating a balanced inter-sectoral growth as the country moves towards becoming an industrialized country as envisaged by Vision 2020. A synergistic two-way demand and supply flows between the two sectors combined with further growth in the utilization of either wholly indigenous or in combination with imported materials will feature the importance of ANR in the overall industrialization process. Increased thrust towards the further development of agro-based industries will require the formulation and adoption of a policy which incorporates, inter-alia:

i. Copious supply of cheaper quality of raw materials from primarily local sources;
ii. Strengthened R&D efforts including public-private cooperation in new product development as well in industrial raw material utilization;
iii. Specialist extension inputs and technical assistance to up-grade the production and processing technologies to standards and qualities that meet international requirements;
iv. Pursue an aggressive marketing strategy to achieve new market penetration, greater accessibility in existing markets through bilateral and multilateral negotiations as well as improved market research, market intelligence and market information systems; and,
v. Improvement in the investment package (2nd Generation GNAIP) to promote integrated projects and those that embody cost efficient technologies including from foreign sources.

This policy will take cognisance of specific sub-sectoral policies similarly identified here in above. That is the intensification of food-based industries with particular emphasis on sub-sectors which have shown lacklustre performance. Efforts will be undertaken as follows:

i. Further processing of cashew apples and mango fruits into canned and irradiated fruits, fruit juice and concentrates for local consumption and/or export market as appropriate;
ii. Vegetable processing especially in the area of import substitution in tomato puree production and processing of root crops into flour and starch and other high value added products;
iii. Processing of meat (poultry, pork and beef) into sausages, salami and canned forms as appropriate;
iv. Production of animal feeds from agro-industrial waste, grain maize, beans, cassava, rice brand and groundnut hay; and,
v. Production of fisheries products like canned tunas, sardines, crustaceans and molluscs;

2.9 SUPPORTIVE INFRASTRUCTURE

To achieve the desired level of transformation of the ANR sector on sustainable basis within the fore-seeable time horizon of 2026 this policy will pay special attention to improved supportive infrastructures of:

a) Incentive schemes;
b) Research and development;
c) Extension services;
d) Agriculture credit/finance; and,
e) Marketing.

2.9.1 Incentives

To expand and deepen the support for changes necessary in the transformation of ANR sector into Commercialized Sector to produce food and raw materials for the nation, existing fiscal incentives will be reviewed, improved and restructured. Such fiscal incentives will, among others, attract investments and resources into the ANR sector and enhance backward linkages through the utilization of local products for processing and value-addition.

A new package of tax incentives such as Agricultural Development Allowance for individual farmers, farms and for farmers' organizations/fishermen organizations of an appropriate level will need to be considered after a thorough review of the incentive structure of agricultural production in The Gambia. Similarly, a liberal level of Abatement of Adjusted Income should be considered for individual, farmers/farms and farmers' organizations/fishermen organizations, involving ANR activities that include crop, livestock, animal fodder and fisheries sub-sectors. Thus, the new package developed will replace the tax incentives available to ANR production. For ANR downstream activities '' improvement in the investment package'' suggested in 2.8(v) will apply.

Incentives in the form of tax rebates are proposed to be extended to the following:

i. Would-be new private farms which source their raw materials for agro-processing from organized farmer groups – contract farming/out growers schemes/contract supply; and,
ii. For medium-scale investors in ANR activities both in primary production and downstream activities, the provisions under the Agricultural Development Allowance will cater for such incentives

2.9.2 Research and Development

Growth and development in ANR production and trade will require competitiveness, new production processes and methods, product development, new technological options and sustenance of comparative advantage and R&D will be a crucial instrument for these.

The R&D. agenda will be determined by the choices in, and the composition of the ANR transformation programme. The R&D programme will be demand- and market-driven and environment friendly. The focus of R&D will therefore, be as follows:

a) Intensification of productivity and efficiency improvements to lower unit costs, reduce losses and increase net yield. The following research areas will be promoted and encouraged:

i. The development of high yielding, high performance and superior quality crops/ livestock/ aquatic varieties and breeds;
ii. Widening the possibilities for greater substitution of labour for capital through the development of mechanized and automated systems especially in labour intensive production operations including the development of new products and processes less intensive in use of labour; and,
iii. Increasing efficiency and product recovery through reduction of post-harvest losses and waste.

b) The development of farms and methods of conservation measures to maintain and improve the integrity of the environment to sustain ANR development in the light of depleting resources will include:

i. Increasing efficiency in the use of natural resources such as improvement in soil, water, and aquatic resource management technologies;
ii. The development of an improved system and the stricter enforcement of regulations for the protection of water catchment areas;
iii. Development of technologies for enhanced utilization of marginal soils such as acid sulphate soils to increase available land for cultivation and exploitation of natural and man-made water bodies for aquaculture;
iv. The generation of environment friendly technologies for the conservation of natural resources, maintenance of ecological balance and environmental quality. These will include the generation of technologies for low input systems such as lesser chemical inputs, integration built-in pollution control, waste disposal mechanisms and appropriate capture technologies in fisheries; and,
v. More efficient management and conservation of genetic resources.

d) Development of technologies for the production of high-value crops and value-added products for specialized market niches. Research areas of focus will include:

i. R&D in high value crops such as selected fruits, vegetables, floricultural crops, etc and aquacultural species for diversification;
ii. Production methods development to enhance downstream activities in both food and non-food products; and,
iii. R&D for the utilization of ANR by-products and wastes for food and other economic use.

e) Development of convenience nutritious and health foods which will increase in demand and therefore, require high technology production levels using modern food processing technologies. R&D efforts in these areas will include:

i. Diversification of food products and the development of convenient foods;
ii. Up-grading of nutritive value of processed food products and food safety; and,

iii. Development of special foods for health needs.

f) Applied socio-economic research which will cover:

i. Marketing which includes studies in changing trends, preference patterns and habits of food consumption;
ii. Policy issues and implications in relation to ANR development and technological changes; and,
iii. The optimization of resource use in the ANR sector.

Adequate resources and planning policy will be given to R&D work including incentives and other programmes to encourage private sector, local and foreign, activity in this domain and in the promotion of joint public-private efforts including sub-contract of R&D work to NARI, ITC and the University of The Gambia (UTG). Legal framework for property rights, process, products and methods will be strengthened.

2.9.3 Extension Services Policy

Extension services are crucial link between the researcher and farming clientele with regard to adoption of technologies and provision of feedback to enable R&D to address specific problems and issues. This will become increasingly important as new and improved technologies are generated which require to be disseminated regularly and be widely adopted. The ANR Policy 2017 – 2026 will emphasize the development of special links between technology generators and adopters through the extension agencies.

The intensification of ANR activities will require specialization of efforts in several areas of the ANR value chain from production to marketing, and different levels involving techno-economic and socio-cultural matters. Thus, the extension services will be improved, rationalized and the expertise upgraded, drawing upon local experiences and extension methodologies successfully applied in other counties. Farmer education will be enhanced to enable continual upgrading of their knowledge and skills especially in the areas of farm management, agronomy, production and methods, processing and agribusiness. The foundation for accelerated self-motivated innovation will be strengthened.

The training of trainers will be given priority to upgrade their skills and build up a training core with specialist knowledge in existing and new product frontiers and processes.

2.9.4 Agriculture Credit/Finance Policy

Adequate credit to finance capital investment and operating expenses is essential for expanding the productive base, introduction of innovation and adoption of new technologies including mechanization. Both commercial banks and developmental credit institutions are important sources for such funds to augment self-generated investible resources.

The establishment of an Agricultural Development Bank (ADB) will make credit available to meet the various requirements in the ANR sector covering crops and projects of strategic

importance, loans of different level of risks, financing of innovations, the adoption of new technologies including mechanization and financing imports and exports.

Financing of the further commercialization of ANR activities and transformation of its production structures to be climate resilient will be further emphasized in the overall credit and interest rate policy of ADB so as to sustain the momentum of change to its ultimate desired level. However access to credit in the long-term will be strictly on commercial basis. The operation of the credit system will be augmented by an Agricultural Insurance Scheme (AIS) so as to minimize repayment risk in the event of production failures while providing for assurances for the bank of loan recovery.

2.9.5 Marketing Policy

The Gambia is a member in many sub-regional, regional and global trade agreements such as ECOWAS, the Cotonou Agreement of Africa Pacific and Caribbean (APC) countries, the African Growth Opportunities Act (AGOA) of the United States and the United Nations' International General Agreement on Tariff and Trade/World Trade Organization (IGATT/WTO) agreements. These memberships confer the country with enormous opportunities to adopt a new marketing culture to undertake marketing of ANR products based on a long-term survival instinct and needs of a corporate entity that recognize Vision 2020: The Gambia incorporated. However, this increasing globalization of the economy, relative perpetuation of protectionism, emergence of aggressive competitors and increasing trends towards the foregoing of wider preferential agreements create new challenges. Thus, the new marketing culture will emphasize the following:

i. Enhancement and improvement of market research and market analysis in both existing and potential markets with particular focus on market requirements of both price and non-price aspects;
ii. An upgraded market intelligence network to provide timely and accurate data on market requirements including consumer preference, price and pricing methodology, existing regulations and planned ones with regards to customs and border requirements, tariff and non-tariff barriers and sanitary and phytosanitary measures. Such market information will also include market shares, existing and would-be competitors and new product development. This will be supported with establishment of an efficient Market Information Dissemination System which serves producers, entrepreneurs and marketers.
iii. Continued participation of Government in multilateral trade negations and other trade fora to protect and seek greater market access through reduction of tariff and non-tariff barriers especially the use of sanitary and phytosanitary as non-tariff measures and easing of commodity flows between countries.
iv. To seek the extension of existing Commodity Agreements and Producer Price Stabilization Schemes with the European Union in other niche market countries for other selected ANR commodities where feasible;
v. Negotiation of bilateral arrangements with selected purchasing new countries to facilitate payments for ANR exports; and,
vi. Step-up trade and promotional effort through overseas exhibitions and trade fairs to be undertaken jointly with the private sector.

With regards to domestic marketing of ANR products efforts will be aimed at increasing demand for domestic products by ensuring continuous high quality supplies for the market and improving the marketing system in terms of facilities and practices at village/town and lumo markets. Research to identify market requirements and potential to monitor supplies and possible sources and to evaluate system facilities and requirements will form the basis for marketing development. Consumer education as advocated by the National Nutrition Policy (2010 –2020) and related promotional efforts to increase the demand for highly nutritive food commodities will be undertaken with the end consumer and the processing industry in mind. Producers, processors and market intermediaries will be encouraged to place high quality, attractive, competitively priced products on the market through grading schemes, designed extension programmes and provision of advisory services. The government will assist in the development of commercial and market-led distribution networks and participate only where necessary. Proper market practices related to health and sanitary requirements, packaging and handling will be further emphasized and enforced.

ANNEX TABLES:

Annex Table 1.1a: Cultivated Area and Production for the Period 1994/95 – 2007/08 in '000 Ha & '000 Mt

Year	Groundnuts	Early millet	Late millet	Maize	Sorghum	Rice	**Total**	**Total Cereal**
Cultivated Area in '000 Ha								
1994/95	75.08	40.00	9.78	10.55	8.43	13.17	**157.01**	
1995/96	78.80	43.50	13.60	12.70	14.90	16.40	**179.9**	
1996/97	68.10	45.30	14.30	10.40	13.60	19.10	**170.80**	
1997/98	73.30	64.50	15.30	9.80	14.60	15.60	**193.10**	
1998/99	75.30	57.90	15.40	11.70	14.20	18.30	**192.80**	
1999/00	112.20	65.90	10.40	14.70	18.50	15.80	**257.50**	
2000/01	124.80	74.10	16.30	14.80	24.40	16.70	**271.10**	
2001/02	138.90	81.30	16.10	17.20	26.20	18.20	**298.10**	
2002/03	105.60	86.50	10.40	18.40	18.30	12.00	**251.20**	
2003/04	107.90	95.50	14.40	21.00	24.70	17.70	**281.20**	
2004/05	116.60	108.20	15.00	24.20	26.10	16.60	**306.70**	
2005/06	134.70	109.90	17.10	27.60	23.00	15.80	**328.10**	
2006/07	110.40	101.40	14.80	32.30	19.00	15.20	**293.10**	
2007/08	117.60	94.20	17.60	36.30	21.70	16.60	**304.30**	
Av. An. % Ch.	**4.37**	**10.42**	**6.15**	**23.26**	**12.11**	**20.03**	**7.22**	
Production in '000 MT								
1994/95	80.8	44.09	8.75	13.31	8.90	20.27	**176.12**	
1995/96	75.20	43.40	10.60	13.60	11.90	19.00	**173.70**	
1996/97	45.80	49.50	12.00	10.00	13.70	18.20	**149.20**	
1997/98	78.10	54.40	11.70	8.50	12.90	13.00	**178.6**	
1998/99	73.50	55.60	9.10	13.00	9.90	18.80	**174.00**	
1999/00	123.00	72.60	8.30	20.40	18.00	31.70	**274.00**	
2000/01	138.00	78.50	16.10	22.00	25.00	34.10	**313.70**	
2001/02	151.00	89.00	16.00	29.00	33.40	32.60	**351.00**	
2002/03	71.20	79.30	7.30	18.60	15.20	20.40	**212.00**	
2003/04	92.90	107.10	13.20	33.40	30.10	31.20	**307.90**	
2004/05	135.90	115.90	16.50	29.20	29.00	21.10	**347.60**	
2005/06	116.00	109.90	13.30	29.90	30.80	19.50	**319.40**	
2006/07	81.80	103.50	14.60	29.10	20.30	15.80	**265.10**	
2007/08	72.60	75.80	13.40	31.40	18.00	11.40	**222.60**	
Av. An. % Ch.	**-0.78**	**5.53**	**4.09**	**10.45**	**7.87**	**-3.37**	**2.03**	

Source: NASS/Department of Planning, Department of State for Agriculture

Annex Table 1.1b: Cultivated Area and Production for the Period 2008/09 – 2014/15 in '000 Ha & '000 MT

Year	Groundnuts	Early millet	Late millet	Maize	Sorghum	Rice	**Total**	**Total Cereal**
Cultivated Area in '000 Ha								
2008/09	121.80	90.00	17.60	24.00	26.20	23.00	**302.60**	**180.80**
2009/10	110.50	93.30	17.60	37.50	25.30	32.60	**316.80**	**206.30**
2010/11	122.60	93.40	18.10	38.30	25.30	40.60	**338.30**	**215.70**
2011/12	111.90	89.40	20.90	25.20	29.50	62.00	**338.90**	**227.00**
2012/13	116.5	95.1	21.6	28.2	31	63.5	**355.90**	**239.40**
2013/14	100.3	82.5	23.2	33.1	28.7	66.3	**334.10**	**233.80**
2014/15	81.02	78.46	22.36	36.70	27.23	66.28	**312.05**	**231,03**
Av. An. % Change	**-5.58**	**-2.14**	**4.51**	**8.82**	**0.66**	**31.36**	**0.52**	**4.63**
Production in '000 MT								
2008/09	108.80	101.60	20.50	32.10	25.50	34.20	**322.70**	**213.90**
2009/10	113.20	88.80	11.30	32.30	12.90	49.90	**308.40**	**175.20**
2010/11	97.50	77.50	18.80	35.70	14.40	62.90	**306.80**	**209.30**
2011/12	83.80	72.90	14.20	23.60	20.50	51.10	**266.10**	**182.30**
2012/13	119.60	96.40	19.60	28.90	23.10	54.20	**341.80**	**222.20**
2013/14	93.80	71.50	22.20	33.00	30.39	69.70	**320.59**	**208.79**
2014/15	80.65	59.11	17.70	30.29	20.28	46.67	**254.70**	**174.05**
Av. An. % Change	**-3.43**	**-6.43**	**-6.14**	**-0.04**	**-2.17**	**7.98**	**-2.61**	**-4.51**

Source: NASS/Department of Planning, Department of State for Agriculture

Annex Table 1.2: Relative Commercial Bank Loans & Advances to ANR and Distributive Trade –1994/2015.

Year	**Total Com. Loans & Advances in D million**	**ANR**		**Distributive Trade**	
		Total share in D million	**% share**	**Total share in D million**	**% share**
Period 1994/2008					
1994	372.09	37.85	10.17	156.80	42.14
1995	375.93	54.08	14.39	146.15	38.88
1996	386.64	49.87	12.90	169.69	43.89
1997	479.58	57.88	12.07	223.60	46.63
1998	590.58	64.93	10.99	252.98	42.84
1999	620.67	48.40	7.80	297.19	47.88
2000	676.99	102.83	15.19	311.87	46.07
2001	792.77	39.63	5.00	340.60	44.10
2002	1337.41	71.70	5.36	539.95	40.37
2003	1865.81	139.45	7.47	596.19	31.95
2004	1613.93	181.40	11.24	499.41	30.94
2005	1982.63	300.98	15.20	478.70	24.14
2006	2379.02	462,18	19.43	517.95	21.77
2007	2631.63	189.39	7.20	719.77	27.35
2008	3536.25	195.48	5.53	960.76	27.17
Period 2009/2015					
2009	4495.22	262.41	5.84	1194.28	26.57
2010	5260.74	289.76	5.51	1547.18	29.41
2011	5451.25	311,05	5.71	14182,55	26.02
2012	5448.69	284.35	5.22	1640.34	30.11
2013	5981.08	180.00	3.01	1917.64	32.06
2014	5334.10	61.52	1.15	1812.72	33.98
2015	4447.53	161.17	3.62	1755.71	39.48

Source: Central Bank of The Gambia

Annex Table 1.3: Rainfall Data for the period 1994-2015 in MM

Year	Yundum	Janjangburey	Basse	Average
Rainfall Data for the period 1994-2008				
1994	1,107.5	1,023.4	1,018.3	**984.7**
1995	887.0	847.8	925.2	**815.6**
1996	684.0	702.0	889.0	**619.3**
1997	959.5	603.5	759.3	**724.5**
1998	793.4	609.5	803.4	**755.6**
1999	1,184.6	1,138.1	1,374.2	**1,191.1**
2000	1,005.4	962.1	832.7	**1,596.8**
2001	867.3	762.7	591.7	**1,524.4**
2002	591.8	469.8	875.2	**603.8**
2003	1,032.3	1,399.0	1,456.7	**1,115.4**
2004	650.3	815.6	933.2	**828.6**
2005	1,202.0	1,066.5	973.7	**1,080.7**
2006	957.4	867.2	681.9	**835.5**
2007	766	839.2	1,049	**884.7**
2008	1,115	607.4	690.5	**804.3**
Av. An. % Change	**0.05**	**-2.90**	**-2.30**	**-1.31**
Rainfall Data for the period 2009-2015				
2009	1,078.4	674.0	928.2	**893.5**
2010	1,220.9	860.3	1,116.9	**1,066.0**
2011	524.7	473.2	516.3	**504.7**
2012	1,322.5	1,023.6	759.3	**1,035.1**
2013	1,302.5	1,020.5	750.0	**1,027.4**
2014	646.6	498.1	892	**678.9**
2015	1,359.4	536.8	1,017	**971.1**
Av. An. % Change	**4.34**	**-3.39**	**1.94**	**1.45**

Source: NASS/Department of Planning, Depart. of State for Agriculture/Department of Water Resource

Annex Table 1.4: Imports of Fertilizers (M/Tonnes) 1994/2015

Year	Fertilizer Type in Tonnes				Total An. % Change	Total An. Av.. % change
	SSP	NPK	UREA	TOTAL		
Period 1994/2008						
1994	1000	500	900	**2400**		3.27
1995	NA	600	500	**1100**	-54.17	
1996	NA	800	400	**1200**	9.09	
1997	NA	648	365	**1013**	-15.58	
1998	NA	800	400	**1200**	18.46	
1999	1937.90	1559.65	816.3	**4313.85**	295.47	
2000	1500	2600	736	**4836**	12.10	
2001	1500	1200	800	**3500**	-27.63	
2002	790	2895	2648	**6333**	80.94	
2003	1380	2780	2873	**7033**	11.05	
2004	1600	3400	1500	**6500**	-7.58	
2005	1719	1380	808	**3907**	-39.89	
2006	1195	3148	2074	**6417**	64.24	
2007	NA	4000	2000	**6000**	-6.50	
2008	NA	2500	1000	**3500**	-41.67	
Av. An.% Change/F Type	**1.39**	**28.57**	**0.79**	**3.27**		
Period 2009/2015						
2009	NA	4500	1500	**5500**	57.14	-2.29
2010	NA	5000	2250	**7250**	31.82	
2011	1719	2080	776	**4575**	-36.50	
2012	1145	2048	1724	**4917**	7.48	
2013	1490	3090	2124	**6767**	37.62	
2014	1879	1643	805	**4327**	-36.06	
2015	1432	2063.75	1250	**4745.75**	9.68	
Av. An.% Change/F. Type	**-4.17**	**-9.25**	**-2.77**	**-2.89**		

Source: National Agricultural Sample /MOA/Private Sector Enterprise

Annex Table 1.5: National Cereal Balance Sheet of The Gambia 1994-2004 (in ' 000 MT)

Particulars	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Opening Stock	**8.0**	**8.0**	**17.0**	**6.2**	**11.31**	**30.8**	**20.0**	**22.8**	**34.2**	**30.54**	**75.0**
1.1 Commercial	3.0	3.0	12.0	4.2	6.3	23.7	15.0	20.8	34.2	30.54	50.0
1.2 Farmers	5.0	5.0	5.0	2.0	5.01	7.1	5.0	2.0	0.00	0.00	25.0
Net production*	**72.7**	**80.7**	**89.6**	**94.8**	**90.46**	**121.4**	**148.3**	**168.3**	**115.8**	**172.4**	**183.3**
2.1 Maize	11.3	11.6	8.5	7.4	11.06	17.3	18.7	24.6	15.8	28.3	24.8
2.2 Millet	44.9	45.9	52.3	56.2	55.00	68.6	79.5	89.2	71.9	102.3	112.6
2.3 Sorghum	7.6	10.1	11.7	11.0	8.39	15.3	21.1	28.4	12.9	25.6	14.0
2.4 Rice	8.9	13.1	17.1	20.2	16.01	20.2	29.0	26.1	15.2	16.2	24.6
Imports	**91.0**	**93.1**	**81.7**	**101.8**	**112.4**	**119.7**	**115.4**	**117.0**	**156.5**	**162.9**	**116.5**
3.1 Commercial	89.4	91.5	78.9	96.1	101.0	115.3	114.2	114.4	152.5	131.9	110.0
3.1.1 Rice**	72.4	77.9	61.3	63.8	66.2	95.6	89.5	74.4	114.6	131.9	95.6
3.1.2 Wheat Flour	17.0	13.6	17.6	32.3	34.8	19.7	24.7	40.0	37.9	31.0	23.4
Food Aid	**1.6**	**1.6**	**2.8**	**5.7**	**11.4**	**4.4**	**1.2**	**2.6**	**4.0**	**5.1**	**6.5**
4.1 Rice	1.0	1.0	2.2	3.6	9.0	4.4	1.2	2.6	2.2	4.2	6.0
4.2 Wheat Flour	0.6	0.6	0.8	2.1	0.0	0.0	0.0	0.0	1.8	0.4	0.5
Total Availability(1+2+3)	**171.7**	**181.8**	**188.3**	**202.8**	**214.2**	**271.9**	**283.7**	**308.1**	**306.5**	**365.9**	**374.8**
Population (' 000)	1068.7	1111.9	1174.5	1223.8	1335.7	1385	1443	1451.5	1460	1402	1441
Total Cereal Consumption	**187.0**	**194.6**	**205.5**	**214.2**	**233.74**	**234.6**	**252.5**	**254.0**	**255.5**	**245.4**	**252.2**
Consumption is estimated at 175kg/GE/ capita/ year).											
Closing Stock***	3.0	3.0	6.2	3.7	5.0	20.0	25.0	28.1	31.26	75.0	110.0
8.1 Commercial	3.0	3.0	4.2	3.7	3.0	NA	21.5	24.6	31.26	50.0	60.0
7.2 Farmers	NA	NA	2.0	0.0	2.0	NA	3.5	3.5	0.00	25.0	50.0
Deficit/Suplus (5-(7+8)	-18.3	-15.8	-23.4	-15.1	-24.6	17.3	6.2	26.0	-22.99	+45.5	+12.6

Source: NASS/Department of Planning, Department of State for Agriculture

* Net Production (grain equivalent-GE) is equals gross production minus 15% for seed and lossses ; ** Re-export trade of rice is about 30-50% of total commercial imports; *** Stock held by Department of State for Finance & Economic affairs as buffer stock. NA Not Available.

Annex Table 1.6: Livestock Population in The Gambia (2000 to 2011) '000 Heads

Year	Species				
	Cattle	Sheep	Goats	Pigs	Poultry
Period 2001/2002 – 2007/2008					
2000/2001	374	191	263	14	911
2001/2002	385	197	271	14	938
2002/2003	396	203	279	14	966
2003/2004	408	209	287	15	995
2004/2005	420	215	296	20	1,024
2005/2006	433	221	305	64	1,055
2006/2007	415	183	371	24	718
2007/2008	420	200	374	25	720
Av. An. % Change	**1.76**	**0.67**	**0.60**	**11.22**	**-3.00**
Period 2008/2009 – 2011					
2008/2009	422	197	371	20	750
2009/2010	421	195	375	20	780
2010/2011	398	187	355	20	750
2011	398.47	143.94	302.88	6.39	1,870.38
Av. An % Change	**-1.86**	**-8.98**	**-6.12**	**-22.68**	**49.79**

Growth rate- 3%, Off-take-11.2%

Sources: Department of Livestock Services, Department of Planning, Central Statistics Department & Agricultural Census (2011).

Annex Table 1.7a: Fishery Product (Biomass, Production and Exports) – 1995/2003

Year	Biomass M/Tonnes		Fisheries Production In M/Tonnes		Fish & Fishery Products Exports	
	Demersal	Pelagics	Industry	Artisanal	Qty M/Tonnes	Val. In (GMD)
1995	22,000	156,000	6,937.1	20,799.2	1,817.1	27,149,996.00
1996	*	122,000	8,371.7	30,509.8	1,543.3	27,271,831.46
1997	*	113,000	7,988.0	30,242.9	2,063.4	44,427,354.57
1998	*	173,000	7,011.7	26,533.5		33,293,224.67
1999	*	510,000	10,249.3	29,743.2	1,676.5	36,563,649.00
2000	*	213,000	9,236.6	26,867.0	900.7	32,779,476.58
2001	*	217,000	11,198.0	32,016.0	948.8	35,726,198.72
2002	*	242,000	12,160.0	32,336.0	932.40	21,334,061.57
2003	*	62,000	10,469.0	34,124.0	445.00	11,629,895.33
Av, An % Change		**-7.53**	**6.36**	**18.83**	**-0.76**	**-7.15**

Annex Table 1.7b: Artisanal Sub-Sector Fisheries Production – 2006-2012 in Kg

Zone	2006	2007	2008	2009	2010	2011	2012
Atlantic	**32,975,896**	**33,574,558**	**34,464,659**	**36,639,976**	**34,893,065**	**24,875,575**	**24,897,066**
Gunjur	9,402,964	9,589,588	10,641,383	11,492,694.1	10,574,555	11,568,122	8,412,360
Tanji	7,334,273	7,466,895	8,835,340	9,683,532.2	8,661,922	-	4,900,040
Brufut	4,957,713	4,991,776	4,211,604	4,380,067.7	4,527,816	5,540,706	3,627,963
Bakau	3,226,383	3,078,562	2,924,232	2,997,337.4	3,000,044	1,149,966	985,745
Banjul	2,728,956	2,972,728	2,815,055	2,851,651.1	2,879,812	348,656	263,952
New/Old Jeshwang	2,505,354	2,803,174	2,727,828	2,793,295.6	2,774,766	2,329,268	2,456,123
Sanyang	1,648,426	1,678,212	1,477,607	1,551,487.7	1,569,102	-	-
Kartong	548,853	512,991	480,518	501,180.2	498,230	3,714,553	3,854,632
T/batokunku	308,607	293,450	231,719	250,256.3	258,475	-	-
Barra	314,367	187,182	119,374	138,473.9	148,343	224,304	396,251
Inland	**8,904,796**	**9,432,137**	**8,376,605**	**9,241,458**	**9,016,733**	**5,333,660**	**5,635,018**
Upper R. South Bank	4,310,689	4,566,185	4,142,060	4,651,532.9	4,453,259	1,543,714	945,123
Lower R. South Bank	3,610,712	3,824,270	3,214,866	3,529,922.4	3,523,019	2,943,956	3,644,263
Lower R. North Bank	721,613	764,383	756,637	779,335.6	766,785	845,990	1,045,632
Upper R. North Bank	261,783	277,299	263,043	280,667.4	273,670	-	
TOTAL	**41,880,692**	**43,006,695**	**42,841,265**	**45,881,434.5**	**43,909,798.00**	**30,209,235**	**30,532,084**
Av Total. Ann. % Change							**-4.52**

Source: Department of Fisheries

NB: 1. All Catches are in kilograms

2. The inland Fishing landing sites are catogorized into four fishing administrative areas

3. Due to human and financial limitation some of the Atlantic Coast landing sites were unable to be covered in 2011 and 2012

Annex Table 1.8a: Imports of selected Food Commodities – 1994/2002 CIF (D 000) and Weight (MT)

Year		Commodity								
		Rice	Vegetable oil	Fruits/ Vegetables	Sugar	Tea	Tomato paste	Onions	Coffee	Flour
1994	Value	83712	30533	49535	87036	14497	13956	28899	2904	26383
	Quantity	76907	4795	7547	26939	929	3099	24900	206	7301
1995	Value	72489	36058	22386	59675	11155	15582	3170	12945	27952
	Quantity	21027	6330	6269	10757	762	3687	1358	921	11752
1996	Value	223568	59742	30784	131622	6896	25593	3969	12042	96472
	Quantity	70020	10259	12676	127308	440	5932	2056	829	25181
1997	Value	214411	51136	18310	62521	5655	34812	2494	8910	62613
	Quantity	60080	8890	8943	22380	407	7917	1460	822	19758
1998	Value	452455	76598	27127	138106	11791	19437	6567	20030	91498
	Quantity	96924	18363	12815	57903	668	4241	3640	1811	36903
1999	Value	191658	54641	26848	189309	11920	15879	8959	15939	64258
	Quantity	55613	15190	12562	83830	906	3640	4903	1436	26535
2000	Value	195562	66500	38418	173126	22548	23355	10607	438	79305
	Quantity	93931	12287	23155	83754	1953	4121	11712	16	23187
2001	Value	130812	85244	20867	176259	10175	22301	2929	NA	71721
	Quantity	49,866	16904	9995	39826	926	4190	8530	NA	23464
2002	Value	251272	82124	27381	316801	21822	34588	5801	NA	121293
	Quantity	73825	17815	17789	79802	1752	53348	2236	NA	37699
Av. An. % Change	Value	25.02	21.12	-5.59	33.00	6.32	19.38	-10.00	-10.61	44.98
	Quantity	-0.50	33.94	16.96	24.53	11.07	202.68	-11.38	-11.53	52.04

Source: Department of Central Statistics. Notes: NA =Not Available

Annex Table 1.8b: CIF Imports – Livestock Meat, Milk and Fish in 1995/2004 (in D'000)

Year	**Livestock Meat**			**Milk**	**Fish**
	Beef	**Mutton**	**Poultry**		
1995	232	322	2,807	32,817	2,070
1996	85	1			1,535
1997	285	454	1,971	28,070	1,440
1998	57	62	3,312	63,996	1,484
1999	139	1,784	4,729	58,556	**NA**
2000	289	280	7,803	38,083	**NA**
2001	180	363	3,140	39,408	**NA**
2002	374	63	16,099	76,011	**NA**
2003	787	414	5,943	83,996	**NA**
2004	6,114	942	13,876	12,903	**NA**
Av. An. % Change					

Source: Central Statistics Department

Annex Table1.9a: Rice Imports CIF (GMD) & Quantity in MT – 2005/2014

Year	**CIF Value (GMD)**	**Total Import (MT)**	**Re-Export**		**Domestic Consumption**	
			CIF Value (GMD)	**M/Tonnes**	**CIF Value (GMD)**	**M/Tonnes**
2005	689,318,668	70,539	NA	NA	NA	NA
2006	289,155,717	35,553	NA	NA	NA	NA
2007	557,567,754	102,790	NA	NA	NA	NA
2008	581,235,944	123,317	NA	NA	NA	NA
2009	811,061,424	126,625	4,877,898	929		
2010	670,700,784	88,214	5,952,140	844		
2011	1,056,291,616	143,768	7,777,965	360		
2012	1,412,878,266	140,672	8,791,316	492		
2013	1,134,640,365	130,226	1,014,907	45		
2014	1,922,574,003	139,871	8,277,392	400		

Source: Central Statistics Department. NA= not available

Annex Table 1.9b: Imports of Selected Food Commodities – 2000/15 in (D'000)

YEAR	PRODUCT	Vegetable cooking Oil: l	Edible Vege-tables & Certain Roots & Tubers	Edible Fruit and nuts; peel of Citrus Fruit or Melons	Refined Cane Sugar	Tea, whether or not flavored	Tomatoes, preserved otherwise than by vinegar or acetic acid, nes	Onions and shallots	Coffee, not roasted or decaff-einated	Wheat or meslin flour	TOTAL
	CIF VAL	63,547	36,362	2,609	16,067	22,582	24,689	10,266	0	79,305	**255,428**
2000	M/TONS	11,890	22,768	680	580	1,980	4,553	11,591	0	23,188	**77,230**
	CIF VAL	48,860	21,055	2,722	163,905	10,174	22,301	2,663	15	72,722	**344,417**
2001	M/TONS	13,584	95,023	573	39,253	926	4,190	85,531	2	23,464	**262,547**
	CIF VAL	81,243	24,738	2,644	316,114	21,823	34,588	5,458	13	121,294	**607,914**
2002	M/TONS	17,604	17,315	475	79,803	1,753	5,348	2,106	0	37,694	**162,097**
	CIF VAL	151,358	42,322	2,971	458,294	31,747	29,833	9,951	180	126,473	**853,128**
2003	M/TONS	24,107	12,752	631	82,131	1,831	4,377	2,610	20	26,242	**154,702**
	CIF VAL	645,667	72,985	3,636	466,290	86,425	109,646	16,107	62	209,988	**1,610,806**
2004	M/TONS	36,788	17,361	582	54,763	4,409	7,156	3,985	2	31,393	**156,439**
	CIF VAL	422,978	95,362	3,865	450,954	61,563	116,612	19,080	467	263,697	**1,434,578**
2005	M/TONS	31,173	19,670	446	79,197	3,263	8,599	4,291	43	68,188	**214,870**
	CIF VAL	427,894	56,702	2,182	327,875	59,524	116,706	22,614	444	227,685	**1,241,625**
2006	M/TONS	32,291	13,437	264	53,048	3,445	9,005	6,169	56	36,005	**153,720**
	CIF VAL	453,931	55,122	2,284	392,314	60,067	121,511	18,538	390	130,168	**1,234,325**
2007	M/TONS	38,199	14,741	306	69,096	3,271	8,815	5,830	16	33,812	**174,085**
	CIF VAL	369,645	73,026	2,213	251,630	53,266	80,458	27,276	518	125,732	**983,765**
2008	M/TONS	32,770	16,906	196	89,825	3,222	9,058	6,324	31	36,470	**194,802**
	CIF VAL	575,462	108,593	1,985	328,926	44,837	92,260	67,152	221	180,022	**1,399,457**
2009	M/TONS	36,647	15,058	205	89,232	2,587	30,891	9,677	8	50,088	**234,392**
	CIF VAL	500,873	109,607	34,304	134,430	68,270	81,436	74,104	305	311,617	**1,314,945**
2010	M/TONS	31,326	16,087	2,290	27,669	3,297	6,064	11,434	25	64,372	**162,564**
	CIF VAL	492,993	104,721	3,770	24,676	86,002	90,970	74,214	107	329,895	**1,207,348**
2011	M/TONS	37,518	15,525	626	4,314	4,961	8,359	11,543	12	64,372	**147,230**
	CIF VAL	588,729	99,437	7,115	20,751	83,551	97,643	76,723	342	451,195	**1,425,486**
2012	M/TONS	43,503	14,202	1,471	2,302	4,796	8,104	10,982	29	65,006	**150,394**
	CIF VAL	612,076	92,767	12,881	36,199	79,680	108,506	70,195	24	670,229	**1,682,557**
2013	M/TONS	39,359	12,162	1,302	4,378	4,375	9,893	9,436	1	45,995	**126,901**
	CIF VAL	1,157,724	139,635	16,723	31,239	90,578	55,141	106,491	892	63,841	**1,662,263**
2014	M/TONS	55,781	16,637	1,576	3,053	4,062	4,873	13,372	38	4,938	**104,331**
	CIF VAL	872,803	157,878	16,196	70,435	79,400	83,373	111,053	147	407,751	**1,799,035**
2015	M/TONS	40,329	14,979	1,894	6,693	3,731	7,323	10,870	6	12,333	**98,158**

Source: Central Statistics Department

Annex Table 1.9c: Imports of Livestock/Fisheries Products – 2000/15 (in D '000)

YEAR	PRODUCT	Meat AND EDIBLE MEAT OFFAL	Fish and crustaceans, molluscs and other aquatic invertebrates	Poultry	Milk and Milk Products	TOTAL
	CIF VALUE	13,573	3,365	123	40,232	**57,294**
2000	M/TONS	1,835	570	1	26,287	**28,692**
	CIF VALUE	7,965	15,439	581	41,308	**65,294**
2001	M/TONS	1,921	393	108	5,999	**8,420**
	CIF VALUE	21,566	809	7,991	79,603	**109,969**
2002	M/TONS	5,781	157	2	11,832	**17,771**
	CIF VALUE	23,073	1,299	383	94,646	**119,401**
2003	M/TONS	4,346	114	1	13,932	**18,393**
	CIF VALUE	36,720	1,194	420	140,713	**179,048**
2004	M/TONS	3,918	128	2	12,248	**16,296**
	CIF VALUE	38,620	1,852	221	220,193	**260,885**
2005	M/TONS	5,042	243	1	13,563	**18,849**
	CIF VALUE	48,616	2,672	164	140,182	**191,634**
2006	M/TONS	4,565	373	0	13,154	**18,093**
	CIF VALUE	40,849	3,568	478	149,061	**193,956**
2007	M/TONS	3,426	160	1	22,802	**26,388**
	CIF VALUE	30,775	984	1,488	136,156	**169,403**
2008	M/TONS	4,216	190	0	13,562	**17,968**
	CIF VALUE	53,275	1,088	521	131,521	**186,404**
2009	M/TONS	7,738	189	1	13,718	**21,645**
	CIF VALUE	48,410	2,497	619	146,898	**198,424**
2010	M/TONS	6,464	219	1	15,043	**21,727**
	CIF VALUE	63,524	1,425	1,769	157,005	**223,724**
2011	M/TONS	7,434	106	2	17,252	**24,794**
	CIF VALUE	55,648	609	1,173	189,814	**247,243**
2012	M/TONS	8,873	102	3	21,012	**29,991**
	CIF VALUE	41,619	2,610	1,757	161,069	**207,055**
2013	M/TONS	5,199	220	2	17,409	**22,829**
	CIF VALUE	120,358	9,367	26	241,187	**370,938**
2014	M/TONS	11,426	357	1	22,416	**34,200**
	CIF VALUE	213,564	2,808	1,258	257,398	**475,028**
2015	M/TONS	13,205	131	2	22,757	**36,094**

Source: Central Statistics Department

Annex Table 1.10: Shares of ANR in the Development Budget: 1995 - 2015 in D'000

Year	Development Budget Expenditure in D '000' and %age			
	Total	Of which ANR		ANR Allocation. as a % of US$8 million
		Absolute	%	
Period 1994/1995 – 2008				
1994/95	273,285	60,730	22.2	27.11
1995/96	96,605	13,335	13.8	5.95
1996/97	149,336	40,765	27.3	18.20
1997/98	275,747	35,241	12.8	14.44
1998	343,155	36,161	10.5	16.14
1999	101,007	19,428	19.2	8.67
2000	340,724	47,626	14.0	21.26
2001	211,857	43,521	20.5	19.43
2002	1,039,311	248,385	23.9	110.89
2003	916,074	57,450	6.3	25.65
2004	1,638,192	127,985	7.8	57.14
2005	1,321,162	110,801	8.4	49.46
2006	2,946,844	232,168	7.9	
2007	3,998,748	225,218	5.6	
2008				
	Development Budget Expenditure in ANR in D'000 and % of Total Budget			
	Total	Of which ANR		ANR Allocation in Line with Maputo 10% Declaration
		Absolute	%	
Period 2009 – 2015				
2009	4664294	84,916	1.82	
2010	5,142,487	64,887	1.26	
2011	3,994,945	41,878	1.05	
2012	5,837,934	515,267	8.83	
2013	4,625,351	61,584	1.33	
2014	8,642,446	318,249	3.68	
2015	8,986,244	518,489	5.77	3.31

Source: Development Estimates 1985/86 to 2015, DOSFEA

Annex Table 1.11: The total number of community forest demarcated as at 2016

Region	Start Up			PCFMA		CFMA		Total	
	Not Demarcated	Demarcated							
	No	No.	Ha	No	Ha	No	Ha	No	Ha
West coast Region	11	12	725.63	5	2308.35	46	4740.1	74	7774.17
Lower River Region	18	15	1853.19	16	2856.05	23	2243.39	72	6952.63
North Bank Region	17	9	773.20	8	235.0	3	122.30	37	1130.50
Upper River Region	26	8	669.0	0	0	23	2233.85	56	2902.85
Central River Region South	35	17	2809.35	8	102.79	54	4424.12	114	7336.26
Central River Region North	18	9	282.91	13	1365.57	65	3937.52	105	5586.0
Total	125	70	7113.28	50	6867.76	214	17701.28	459	31682.32

Source: Department of Forestry, 2015

APPENDICES

Appendix 1.1: Specific Land Use Classes and Their Areas as at 2010

Major Land Use Classification and Sub-Classes	Area in '000 ha	% of Major Use	Error % (se)
FOREST	**302**	**100**	
Forest Evergreen Area	15	4.9	63.0
Forest Deciduous Area	160	53.2	17.1
Forest Semi-Deciduous Area	88	29.2	24.6
Mangroves	36	11.9	36.7
Palms	3	0.8	63.8
OTHER WOODED LAND	**123**	**100**	
Shrubs	56	45.9	31.6
Wooded Grassland	53	43.0	24.6
Wooded Wetland	14	11.1	61.9
OTHER LAND	**503**	**100**	
Bare Land	31	5.3	30.8
Natural Grassland	21	3.6	33.7
Marsh Land	30	5.1	37.6
Barren Flat	17	2.9	39.3
Improved Pasture	5	0.9	87.3
Annual Crops	375	63.6	9.2
Perennial Crops	8	1.3	57.1
Mixed Annual and Perennial Crops	16	2.8	40.0
Fallow	42	7.2	23.3
Built Up Area	41	6.9	37.2
Quarry Mining Site	2	0.3	51.4
INLAND WATER	**118**	**100**	
Area River	114	96.3	23.5
Area Intermittent River	4	3.7	69.0
TOTAL SURFACE AREA	**1,046**	**100**	

Source: National Forest Assessment 2008 – 2010

Appendix 1.2: Ongoing and Completed Public Sector Projects from 1992 to 2007

Project	Objective	Duration	Cost	Donor	Status
Lowland Agricultural Development Programme	To sustainably increase rice production through improved access and water control	1997-2004	11.66 M US	IFAD, ADF	Ongoing
Participatory Integrated Watershed Management Projct (PIWAMP)	To increase land productivity and reduce soil erosion on a sustainable basis	2005-2010	12.085M	IFAD/NTF	Ongoing
Househlod Food Security	To enhance household food security status of the poor through increased production, preservation and marketing	1997-2000	1.00 M US$	UNDP	Completed
Rural Finance and Community Intitiatives Project	To increase food security through rural finance and local initiatives	1999-2005	10.99 M US$	IFAD	Ongoing
Peri Urban Smallholder Improvement Project	To increase on a sustainable basis the production and marketing of livestock and horticultural products by small holders in NBD and WD	2001-2005	5.72 M UA	AfDB	Ongoing
Enhancing Rural capacities through Livestock Development	To enhance the living standards of rural communities through the development of livestock production and marketing on sustainable basis in CRD	1995-1997	US$ 1.2 Million	UNDP	Completed
Integrated Rural Development Project for Livestock	To strengthen the livesstock industry based on the avilability of feed and water without degrading traditional grazng areas under the management of local communities	1996-1999	US$ 1.5 Million	IDB	Completed
Forestry Project in Central River Division	To promote the Gambia forestry sector with a view to extending appropriate management system to selected forest areas	1996-1997	G/Mark 7.5 million	KFW & GTZ	Comp leted
DIAPER III	Improvement of the instruments for permanent diagnosis for regional food security in the Sahel.	1997-1999	US$ 300,000	EU	Completed
Rural water and Sanitaion Project	To reduce drudgery and time spent in water lifing, in WD, LRD and CRD South.	1997-1999	US$ 5.052 Million	UNDP, UNCDF	Completed
Special Programme for Food Security	To increase food security through the production of short cycled species of crops and livestock	1999-2004	2.65 M US$	FAO, IDB,Italy	Ongoing
Irrigated Integrated Rice Development Project	To increase rice production and productivity in the CRDN	2001-2005	3.728 M US$	KFAED	Ongoing
Pan African Control of Epizotics	Enhance the capacity of DLS in disease surveillance, improve veterinary services through greater privatization and fight against rinderpest through vaccinations and strengthening suriveillance networks.	2002-2005	NA	EDF	Ongoing
Research and Development Project for Livestock Farming in West Africa(PROCORDEL)	Conduct research on animal health, Animal production and on the socioecomics of low input market oriented systems	2000-2004	NA	EDF	Ongoing
Improving Milk Safety and Farmers Income using the Village Milk System	Improve the safety of milk and milk products in the Greater Banjul Area	2002-2004	235,000 US$	FAO	Ongoing

Appendix 1.3: Ongoing and Completed Public Sector Projects from 2008 to 2015

Project	Objective	Duration	Cost	Donor	Status
National Agricultural Land and Water Management Development Project **NEMA**	Reduced poverty of rural women and youth. Increased incomes from improved productivity based on sustainable land and water management practices	2013 - 2019	US$ 64,900,000	IFAD / AfDB / GLF	Ongoing
Food and Agriculture Sector Development Project **FASDEP**	To enhance household food security status of the poor through increased roduction, preservation and marketing	2013 – 2018	US$ 26,600,000	GAFSP / AfDB	Ongoing
Gambia Agricultural Commercialization and Value Chain Management Project **GCAV**	GCAV is to improve productivity and access to market of targeted agricultural commodities for smallholders in the Project Area	2014 - 2019	US$ 15,900,000	WB	Ongoing
Rural Finance Project – RFP	To help increase rural incomes by facilitating access to financial capital and markets	2008 - 2014	US$ 8,725,072	IFAD	Completed
EU MDG 1(c) Project	To increase on a sustainable basis the production by small holders in NBR, CRR/N, CRR/S and URR	2013 - 2018	Euro 7,600,000	European Union	Ongoing
West African Agricultural Productivity Project **WAAPP**	To generate and accelerate the adoption of improved technologies in the participating countries' top agricultural commodity priority areas as outlined in the ECOWAP	2011-2016	US$ 12,860,000	WB	Ongoing
Livestock and Horticulture Development Project **LHDP**	To sustainable increase the production and marketing of horticultural and livestock products and by-products	2009 - 2014	US$ 15,900,000	IFAD, AfDB, GLF	Completed
Regional Project on Sustainable Management of Endemic Ruminant Livestock in West Africa **PROGEBE**		2008 - 2014	US$ 4,106,000	AfDB, GEF, GLF	Completed
Sustainable Land Management Project **SLMP**	To address the interlinked problems of rural poverty, food insecurity, and land degradation, through innovative sustainable land management technologies and community-based participatory watershed/ landscape management planning approaches,	2012 – 2015	US$ 4,400,000	GEF / AfDB	Completed
Gambia Emergency Agricultural Support Project (GEASP)	To improve access to agricultural inputs, equipment and post-harvest storage capacity by targeting farmers in nine vulnerable districts.	2013-2014	US$2,850,000	JSDF/WB	Completed
Other ANR Projects (EIF, BAANAFA, Coastal Resilience Project, Early Warning Phase II & GCCP)		2011 - 2019	35,689,929	GEF, UNDP, UNEP, DF, NAPA, WB, EU	Completed
FAO – TCPs & Telefood		2011-2015	2,795,552	FAO/ Telefood	Completed
FAO implemented donor funded projects (excluding FASDEP & EU MDG 1c)	To accelerate progress towards achieving MDG-1c in The Gambia:	2011-2015	8,725,289	Multi-lateral	Completed
GEF Coastal Resilience Project;	"Enhancing Resilience of Vulnerable Coastal Areas and Communities To Climate Change In The Republic Of Gambia.".	2014-2017	US$8.9m.n	GEF	On-going
Global Climate Change Alliance	Contribute to " the capability of the government and people of the Gambia to adapt to increased climate change variability and change"	2012-2016	3.86 million Euros	EU	Completed
COAST Project	To capture Best Available Practices (BAPS) and Best Available Technologies (BATS) for contaminant reduction & sustainable collaborative tourism investment etc.	2009-2014	US$75,999	GEF	Completed
Protected Areas Resilient to Climate Change	Help countries make their Protected Areas networks more resilient to the impact of climate change	5 years (2010-2015)		GEF	Completed
Mangrove Ecosystems restoration				AUCRAP	
Mangrove litter fall and quality study				AFRONET	
Tillage systems to enhance nutrient and water use efficiency				SM-CRSP	

Source: Ministry of Agriculture: (including Projects to meet GNAIP Funding Gap) and NEA

Appendix 1.4: Investment Actions to Fill Gaps in the 1st Generation GNAIP for Inclusion in the 2nd Generation GNAIP

Sequel to a thorough gap analysis of the 1st Generation GNAIP Policy Objectives and Strategies and proposed investment focuses the Review Meetings identified a number of investment gaps and/inadequacies for consideration in the 2nd GNAIP. The proposed identified investment gaps are summarized hereunder:

1. Rehabilitation of the Mixed farming centres to become model agriculture centres;
2. Intensification of rice and horticulture production, processing, and marketing;
3. Provision of cold storage facilities in the urban Area and farmer cooperatives in the West Coast Region;
4. Strengthening the transportation bit of value linking rural producers to the more than 54% of the Urban dwellers;
5. Investment on micro–gardening and poultry production;
6. Tidal and pump irrigation intensification (land development and rehabilitation works);
7. Value addition and appropriate storage facilities for essential crops;
8. Capacity building of regional staff from certificate to Doctorate level;
9. Investment in value addition for Agricultural produce;
10. Investment in land development and natural resources management;
11. Consolidation and expansion of agro industries;
12. Development of storage and marketing (cooperatives) and transformation of farmer groups into producer cooperatives;
13. Development and improvement of ANR extension systems;
14. Mass awareness and sensitization about the existence of Urban Agriculture;
15. Capacity building for staff including induction, in-service, short term and long term trainings;
16. National Land Resources Survey and geo referencing;
17. Rehabilitation of the office complexes and equipping with internet facility;
18. Increase incentives to motivate staff (night allowances, mobile phones, fuel and mobility;
19. Encouraging entrepreneurship in Agriculture through providing flexible matching grants to farmers or establish an Agricultural Development Bank to address such concerns;
20. The widespread availability and accessibility of aflasafe for use in soil preparation as part of ground work in preparation of planting season as well as other farm input e.g. Fertilizer, seeds etc through subsidies to make affordable;
21. Increased implementation of GAP along the whole value chain from soil preparation, planting methods, weeding, harvesting, farm storage, transportation and storage;
22. Investment on economic activities which are not of potential threat to the environment ie investments that do not pollute the environment and subsequently affect the natural resources;
23. Investment on ''good practices'' techniques in environmental planning and management;
24. Strengthen the establishment of procedures for data collection, analysis, planning for natural resources management and Geographical Information System; and,
25. Investment in research, value addition and advocacy for vulnerable groups.