

# Land: An Empowerment Asset for Africa

The Human Factor Perspective



Edited by  
**Claude G. Mararike**

# **Land: An Empowerment Asset for Africa** The Human Factor Perspective

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Claude G. Mararike



University of  
Zimbabwe

**UZP**  
Publications

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**Land, Wildlife and Environment**

# **Agro-forestry Resources Management, Transformation and Challenges in Southern Africa: The Case of Post-land Resettlement in Zimbabwe, 2000-2013**

Godfrey Chikowore, Innocent Chirisa, Harold Annegarn,  
Tafadzwa Makonese, Chihiro Ito, Verengai Mabika and Sam  
Ruturi

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## **Introduction**

The challenges of sustainable agro-forestry management in the humid, semi-arid, arid and desert regions have generated responses that have progressively transformed the habitat of flora and fauna and the lives of many communities based on agro-forestry development (Christopherson, 2009: 276-316). Specialised agro-forestry land use in Zimbabwe transformed these regions, formerly regarded as economically unproductive and agriculturally non-viable land. Based on a system of scientifically founded agro-climatic and agro-ecological regions of Zimbabwe, favourable conditions for sustainable agro-forestry development have been found to decline with movement southwards, especially in the post-independence phase. A wholesome land acquisition programme generated the decline, which was a contradiction to both progressive transformation and sustainable agro-forestry land use. Nevertheless, the declining conditions in circumstances of scientific and technological development and enhanced sustainable agro-forestry policy that promotes agro-forestry operations viability, afforestation, and robust tourism. This could be well reversed to ensure resonance between agro-forestry and development and consolidation of specialised agro-forestry land use in which nationals and their international counterparts add more value to the socio-economic cultural processes of Zimbabwe in a global context.

The post-land resettlement sustainable agro-forestry policy should inherently promote progressive land reform and transformation in which

the wellbeing of communities, as well as flora and fauna, is predictable and guaranteed on both short and medium term (Chiwandamira and Mbengo, 1999: 13-50). Progressive governance can induce sustainable agro-forestry transformation in humid, semi-arid, arid and desert regions of Zimbabwe by systematically exploiting the opportunities inherent in the North-South and South-South Development Dialogue. This argument is developed by a pursuit of an analytical agro-forestry resources conceptualisation in a context of agro-ecological zones in Zimbabwe, agro-forestry resources transformation and challenges in a land reform context 2001-2013, essence of agro-forestry resources transformative management in a North-South and South-South Development Cooperation Dialogue context, and viable alternatives to sustainable agro-forestry resources management. The debate is consolidated by a definition of resonating and contradictory key conceptual terms as afforestation, deforestation, reforestation and progressive land reform, anchored on progressive three principles of agro-forestry operations, viability, afforestation, and robust tourism fully exploited within a North-South and South-South Development Cooperation Dialogue.

Agro-forestry resources management for development in Zimbabwe got scientifically founded with the development of agro-ecological zones as a system based on rainfall pattern with movement southwards from the northern region. Nevertheless, with land reform in Zimbabwe, the significance of agro-ecological zones for sustainable agro-forestry management appeared to have been dubbed insignificant for a post-colonial phase, socio-economic "Cultural Revolution". Inherently, the "insignificant dubbing scenario" generated, pronounced deforestation trends as the newly resettled farmers, through the land reform, created more space for agricultural land and cut firewood for income generation due to constant power blackouts. This chapter analyzes the problem by contextualising agro-forestry resources management within agro-ecological zones, analyzing agro-forestry resources transformative management challenges within a North-South and South-South Dialogue. It proposes alternatives for sustainable post-colonial agro-forestry resources management as a strategy on averting deforestation, land degradation and desertification. Employing comparative analytical methods, descriptive analysis and historical methods, the chapter argues the scientific credibility of agro-ecological and agro-climatic zoning in Zimbabwe for a progressive agro-forestry resources management that leads to socio-economic cultural transformation of the nation within a global context (Cambitzis, 1972).

The chapter revolves around three guiding principles, namely, agro-forestry operations viability, afforestation and robust tourism. Defining key terms as “afforestation” and “deforestation,” the chapter exposes their contradictory meaning, while explicitly indicating how sustainable agro-forestry resources management could be consolidated to benefit Zimbabwean nationals and international development partners based on the nature of their response to afforestation and reforestation. Arguing that agro-forestry resources management in Zimbabwe is not simply an inward but equally outward oriented process, it ultimately remains to benefit the nationals more when conceived as a multinational subject of mutual concern, especially its socio-economic cultural dimension. Based on the above insights, the research contends that inasmuch as the land reform occurred in Zimbabwe, it remains a significant reformative vehicle that should be premised on the scientific agro-ecological zones that constantly inform progressive agro-forestry resources management in Zimbabwe.

Informed by the theory of transformative development, the chapter critically exploits thematic primary and secondary materials from the library with an approximate three-and-half decade historical lifespan. Sustainable and specialised agro-forestry land use and development illustrative diagrams and maps spun through the study (Cambitzi, 1972). Quantitative and qualitative data analysis that promotes best practise in agro-forestry management and development in the savannahs, where Zimbabwe is situated, was employed, and complemented by comparative, descriptive and historical analysis in this research. Evaluation of data and recommendations on the optimisation of agro-forestry management, especially for ensuring progressive land reform in humid, semi-arid, arid and zones of Zimbabwe, are drawn from relative similar transformative development experiences from other regions across the world. This contribution is rendering greater effect to efforts on institutionalising sustainable agro-forestry policy based on the scientific significance of agro-ecological and climatic zones in Zimbabwe (Kanyenze *et. al*, 2011: 77-79). Promotion of progressive land reform and specialised agro-forestry land use is a national and international multi-stakeholder socio-economic cultural concern. Already, it has an immense momentum for transformation existing within the opportunities offered by North-South and South-South Development Cooperation Dialogue.

### **The Principal Argument**

Essentially emphasising the criticality of a progressive and sustainable agro-forestry policy, which leads to a specialised agro-forestry land use



in Zimbabwe, the research purports to argue that agro-ecological and climatic zones of Zimbabwe remain fundamental in consolidation of progressive land reform in the short, medium and long term in both a national and global context. This argument applies to all agro-forestry operations from subsistence farming, specialised smallholdings, medium and large-scale commercial activities and tourism within what are termed humid semi-arid, arid and desert regions of Zimbabwe. The research argues that progressive agro-forestry transformation of these regions, based on exploiting opportunities within the North-South and South-South Dialogue can, over a short- and long-term period, culminate in specialised agro-forestry industrial complexes if as a matter of policy, it is conceived as both a national and international socio-economic cultural concern. Finally, the research argues that the rather hyper-accelerated land reform programme over the 2000 decade appeared to have compromised the triple-fold momentum for progressive agro-forestry transformation in Zimbabwe. This was done by negating the essence of agro-ecological and climatic zones as a scientific basis for specialised agro-forestry land use, by negation of the prior-independence agro-forestry infrastructure which had sustainable national and international underpinnings and, ultimately, by negation of robust agro-forestry transformative opportunities offered within the system of North-South and South-South Development Cooperation Dialogue.

## Literature Review

Mainly concentrating on thematic areas as agro-forestry, semi-arid, arid and desert zones across geographical regions, the existing literature draws attention to sustainable agro-forestry, mainly through promotion of specialised agro-forestry land-use on one hand, while on the other hand, registering reclamation and making arid and semi-arid zones habitable by humans, flora and fauna. The available secondary and primary sources problematise the challenges of sustainable agro-forestry management while emphasising more attention on desertification, semi-arid and aridity projecting it within a context of North-South and South-South development dialogue, making it a critical subject for international cooperation. *The Great Geographical Atlas* (Adrian Webster, Iain Parsons, Marco Drago, Russell L Voisin. 1984: 78-81) pursues comprehensive dialogue where reference is made to robust diversity of life in the savannahs in which Zimbabwe is naturally located. This remarkable scholarly work notes that between the tropical rainforest and desert regions, lie large stretches of savannah which are characterised by seasonal rainfall and long periods of drought. The analysis continues to mention

that those nearest to the forests usually take the form of open woodland, whereas those nearest the deserts consist of widely scattered thorn scrubs and tufts of grass. Unlike temperate grasslands, where the summers are hot and the winters are cold, savannah regions are usually always warm, and in the wet season, rain falls in heavy tropical down-pours. Closely analyzing the diversity of life of the savannahs, this insightful work makes a critical exposition of natural wealth, flora and fauna and human life within the savannah and many other geographical regions. Emphasizing the possibility of flora, fauna and human co-habitation and transformation of savannahs the insightful work reiterates that the ingenuity of man has made many of the savannahs and other geographical zones both habitable and productive in socio-economic cultural terms on one hand.

On the other hand, the book observes that by token of the very ingenuity of man, the human tendency to increase the extent of desertification, deforestation of geographical zones has also become of international proportion. Significant for enhancement of geographical understanding of flora, fauna, social, economic, natural phenomena across geographical regions of the world, this scholarly publication carries and imparts a solid scientific conception of transformation of savannahs, semi-arid, arid lands and deserts. The major transformative message it carries is that diversity of life in the savannahs and the rest of the geographical regions, is not only conducive for flora, fauna and human co-habitation on one hand. However, it significantly can lead to immensely productive and great civilisations as long as the prerequisites for robust specialised agro-forestry land use with strong national and international underpinnings are observed.

Adding value to the debate for progressive and specialised agro-forestry land-use was a comprehensive report entitled "Agro-economic survey of South-Western Matabeleland" compiled by the Agricultural Development Authority (1972). Its concern was over the agricultural economy of the region. the government then mandated the Agricultural Development Authority to undertake as its first priority a survey whose purpose was to establish the agricultural potential and to make recommendations as how best this potential could be realised in the interests of the nation. Comprehensively, the report explored regional assessment with special attention to climate, topography, geology, soils, vegetation and minerals. Further, it considered the statistics giving special attention to areas and sub divisions, population, employment, land-use (European areas and African areas) and livestock. Special attention was also devoted to water resources with analysis and recommendations made by catchment areas (Umzingwane, Tuli, Shashani, Simukwe, Sansukwe, Ingwesi). Special

attention was devoted to European areas given to beef production, bush encroachment, intensification of ranching through introduction of maize feed, irrigation, units consolidation, economic analysis of beef production and recommendations. Special attention was also devoted to African Areas with beef breeding, small stock, irrigation schemes, African purchase land and recommendations. Finally, the report analyzed communications in the area. Apart from the report being significant in terms of the theory and practice of agro-forestry development, it also accentuated the essence of specialisation in agricultural production by optimising the use of limited natural resources especially in arid zones.

Defining the reformative potential inherent within the North-South and South-South dialogue, the "Official SADC Trade, Industry and Investment Review 2005: SADC 25<sup>th</sup> Commemorative Edition" situates SADC Directorates as engines of change and transformation through international cooperation. This work fundamentally promotes the efforts of specialised agro-forestry land use as a national challenge dovetails and nourishes from the regional and international programmes. In light of above-referred breadth, the 2005 Official SADC Trade, Industry and Investment Review series make an exposition of the transformative role of the SADC Directorates, namely Food, Agriculture and Natural Resources (FANR), and Infrastructure and Services, among other directorates in the SADC. It has been a vehicle for transformation in Southern Africa within a global context. The Jewish-Virtual Library: A Division of the US–Israeli Cooperative Enterprise carries as one of its key institutions, "The International Arid Lands Consortium – IALC". This was authorised by the US Congress and created by scientists who believed that as the world's population continued to increase, it is essential that the geographical regions and, especially much of the world's arid and semi-arid terrain, be transformed into habitable and productive land. The significance of this institution in agricultural transformation and conservation of geographical regions is founded in making habitable and productive, land that was earlier on regarded unproductive and derelict.

Apart from that crucial input of agro-forestry significance promoting transformation in Zimbabwe humid, arid and semi-arid zones the contributions by this institution actually enhance and expand the efforts on specialised agro-forestry land-use, regeneration of flora and fauna in cited project lands. A contemporary 2006 publication authored by Mohamed AMO entitled *Reclaiming the Desert: Towards Sustainable Environment in Arid Lands* constitutes a comprehensive collection of contributions from the Middle East and Japan dealing with pressing problems on sustainability in arid zones having a special emphasis on

environmental science and engineering. Specific enlightening debates are developed on sulphur utilisation in agriculture and construction engineering, renewable energy sources, hazardous and wastewater treatment technologies, compliance with the Kyoto Protocol and lively debate on global warming which are all of particular relevance to the ecology of arid lands. Essentially, this contribution better informs and increases the effectiveness of efforts on specialised agro-forestry land-use and progressive land reform within geographical regions as the savannahs, humid, semi-arid and arid zones in line with the most recent technology, knowledge, skills, capabilities and experiences across geographical regions.

In conclusion, literature review gives a very contemporary conception of the theory and practice of progressive agro-forestry development in a manner that enables, on one hand, conservation of geographical regions in as far as coexistence of flora, fauna and communities is concerned (Kanyenze, *et.al*, 2011: 75-125). On the other hand, the literature review while also connoting limitations accentuates the transformative essence of grounding agriculture and forestry management on scientific platform and works, notably agro-ecological and climatic zones of Zimbabwe, within an already existing framework of opportunities in the North-South and South-South Development Cooperation Dialogue.

## **Results and Discussion**

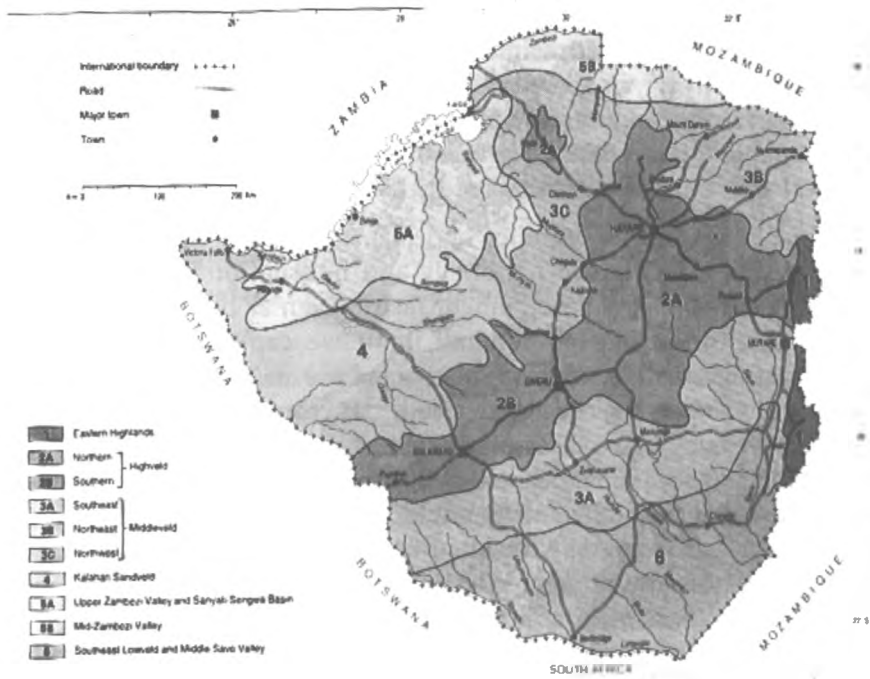
Scientific foundations for sustainable agro-forestry management and progressive land reform were considerably explored in a debate developed within a system of agro-climatic zones, which were determined in the commissioned research undertaken by Vincent and Thomas (1960). Grounded in the physical geographical characteristics of Zimbabwe and the commensurate annual rainfall distribution, a specific spatial distribution of crop and animal cultivation and a commensurate flora, fauna and tourist potential was consolidated (Figures 2 and 3). Essentially, this departure point constituted a solid foundation for rationalisation of the land reform programme in Zimbabwe. Otherwise, outside this framework, land reform would compromise consolidation of specialised agro-forestry land use. Based on the physical geographical characteristics significantly varying between 0 and +2000 metres above sea level, territorial distribution of rainfall in Zimbabwe has commensurately followed the significant variation ranging from < 450 mm to > 1000 mm per year (Figures 1 and 2). Within such a favourable physico-climatic environment, the biodiversity of life in the savannahs can be well sustained along the three principles of agro-forestry operations: viability,

afforestation and robust tourism (World Bank 2009: 142-145). Effectively what also the physical and rainfall pattern in Zimbabwe as defined above implies, is that crop and animal husbandry, flora and fauna, and even conditions of living, improve with ascension on the physical and rainfall calibration ladder. In a reverse manner crop and animal husbandry, flora and fauna, and conditions of living, deteriorate with descent down the physical and rainfall calibration ladder (SADC Review 2005: 280).

Sustainable agro-forestry policy and management in circumstances of rationalising land reform nationally and internationally should take cognisance of this key development factor. Even as both the ascension and dissension scenarios demand immense capital investment for consolidating specialised agro-forestry land use and a wealth of flora and fauna, and a robust socio-economic cultural system within the respective zones, more and huge capital investment accrues to the descent scenario as transformative, innovative and adaptive technologies would need to be developed in naturally unfavourable zones. A scientific conception of this process was marked by the identification of agro-climatic zones in a commissioned study undertaken by Vincent and Thomas (1960 and Figure 1). The study, as shown in Table 1, identified five agro-climatic zones founded on the best combination of the physical and rainfall components, itself constituting a credible scientific platform for developing specialised agro-forestry land-use and a progressive land reform. These zones have historically determined both the pattern of socio-economic cultural activities and agricultural practice in the commercial and traditional sectors of agricultural and forestry development, natural conservancies and national parks and all other related agro-forestry businesses (URL: [http://en.wikipedia.org/wik/wildlife\\_of\\_Zimbabwe#cite\\_note\\_Effects\\_-26](http://en.wikipedia.org/wik/wildlife_of_Zimbabwe#cite_note_Effects_-26)).

Given a scientific definition, the identified agro climatic and ecological zones were characterised along four main parameters, namely, natural region, area km<sup>2</sup>, rainfall (mm) and farming system. On the parameter of ascension, natural region I (agro-ecological zone or agro-climatic zone) in Zimbabwe has an area coverage of 7 000 km<sup>2</sup> almost two percent of land area with a rainfall of over 1 000mm per year. This is mostly confined to the mountainous region in Zimbabwe. In the eastern highlands (Figure 1). The farming system in this region is specialised and diversified with commercially developed plantation forestry, fruit and intensive livestock. Tea, coffee and macadamia nuts are also grown in this region on a commercially viable basis. This is mainly a cash crop region (Figures 1 and 3). As such, specialised agro-forestry land-use with an optimum cohabitation of flora, fauna and local population centred on the principles of sustainable agro-forestry operations, afforestation and robust tourism,

Figure 1. Agro-climatic zones and agro-forestry management in Zimbabwe



Source: Vincent, V. and Thomas, R.G. 1960. *An agricultural Survey of Southern Rhodesia: Part I: Agro-ecological survey*. Government Printer, Salisbury.

could in both the short- and long-term render the land reform in Zimbabwe progressive in national and international terms.

Covering almost 15 per cent of the land area is natural region II with a land area of 58 600 km<sup>2</sup> and a rainfall pattern between 750-1 000 mm with just an intensive farming system (Table 1 and Figure 1). Within this region, there is a mixture of cash and food crop-farming with the domination of cash crop cultivation in the socio-economic cultural activities of the region (Figure 3). Cash crops are based on citrus fruits, cotton and tobacco while livestock is also based on cattle, goat and sheep breeding (Figure 3). The elements of the diversity of life of savannah in terms of flora and fauna in this region has greatly declined and even been disrupted due to a hyper-accelerated land reform process in which pronounced deforestation and rampant killing of wild animals failed to have commensurate protective mechanisms in both the short and long term. This implies that the regeneration of flora and fauna and ecological systems in this region remains without prediction and guarantee. This scenario leaves the state agro-forestry management institutions and the

local authorities in combination with traditional institution, with the task of developing comprehensive agro-forestry programmes.

Depicted in Table 1, natural region III is a semi-intensive farming region covering 72 900 km<sup>2</sup> of land area which is nearly 19 per cent of Zimbabwe. As stated by Vincent and Thomas (1960), rainfall in this region is moderate, in total amount ranging between 650-800 mm per year. This pattern generates severe mid-season dry spells, making it marginal for maize, tobacco and cotton, or for enterprises based on crop production alone. Consequently, the semi-intensive farming systems are, therefore, based on both livestock (assisted by the production of fodder crops) and cash crops. Again, the flora and fauna within this zone have immensely depleted under the 2000-decade land reform, leading to pronounced decline in the diversity of the life in the savannah geographical zone.

**Table 1. Agro-ecological zones of Zimbabwe and the recommended farming systems as agro-forestry management complementary factors**

Natural Region	Area (km <sup>2</sup> )	Rainfall (mm yr <sup>-1</sup> )	Farming system
I	7 000	>1 000	Specialised and diversified farming
II	58 600	750 - 1 000	Intensive farming
III	72 900	650 - 800	Semi-intensive farming
IV	147 800	450 - 650	Semi-extensive farming
V	1,04 400	<450	Extensive farming

**Source:** Vincent and Thomas.1960. *An Agricultural Survey of Southern Rhodesia: Part I: Agro-ecological Survey*. Government Printer, Salisbury.

Natural region IV, as depicted in Table 1 and Figure 1, covers a land area of 147 800km<sup>2</sup> nearly 38 per cent of land area with rainfall ranging between 450-650 mm and a semi- extensive farming system. According to the commissioned study by Vincent and Thomas (1960), rainfall is very low and there are common periodic droughts and severe dry spells during the rainy season. While cash and food crop cultivation is practised, it is risky with the exception of where drought resistant crops are grown on the sidelines. Consequently, semi- extensive farming is founded on livestock (cattle, sheep) and drought resistant fodder crops such as maize. Cotton is also grown in this region (Figure 3). In terms of the status of diversity of flora and fauna and an optimum combination of the three principles of agro-forestry operations, afforestation and robust tourism,

the land reform process needed to return to the scientific foundations informed by agro-ecological and climatic zones in a context of North-South and South-South Development Cooperation Dialogue (Regional Indicative Strategic Development Plan, 2001: 33-39).

Nevertheless, in terms of agro-forestry development and transformation, this region requires huge capital investment in infrastructure development. Equally, research in agro-forestry and infrastructure for development in this region has a great potential with both local and international partners within the North-South and South-South Development Dialogue.

Scientifically defined is natural region V, which is least endowed with rainfall, having an area coverage of 104 400 km<sup>2</sup> nearly 27 per cent of the land area and a scanty rainfall of less than < 450 mm per year (Table 1 and Figure 1). According to Vincent and Thomas (1960) rainfall is significantly low and unsustainable for reliable agricultural production even for drought resistant fodder and grain crops. As such, most of the farming, bringing a pronounced subsistence character, is based on grazing of natural pastures with extensive cattle or game ranching being the only commercially sound farming system for the region. Nevertheless, with development of scientific and technological innovation, extensive irrigation could render region V a more advanced socio-economic cultural outlook exploiting the opportunities offered within the North-South and South-South Dialogue. Otherwise, the natural savannah flora and fauna in this region have been greatly compromised (and even extinguished) by virtue of it being a mostly rural area, where hunting is rife and deforestation pronounced as people cut forest trees for firewood and hunt wildlife for consumption on an ad hoc basis.

Last, but not least, is natural region VI, which, though identified was not characterised in socio-economic cultural terms. Sustainable agro-forestry development in this region should initially be cognisant of the fact that natural region VI is characterised as unproductive land (SADC Review, 2000: 364). Subsistence farming is extensive, both for cattle-rearing and crop-cultivation (groundnuts and maize), let alone savannah wild-life, flora and fauna. Sustainable agro-forestry management in the region should seek an optimum combination of the three principles of agro-forestry operations: viability, afforestation and robust tourism. There is an extensive grazing of pasture, rainfall is least received and practically unreliable for sustainable agriculture. Just like region V, there is need for extensive capital investment in agro-forestry infrastructure development, exploiting the opportunities availed in the North-South and South-South Development Co-operation Dialogue which makes formerly economically



**Figure 2: Physical-geographical aspects and agro climatic zones distribution in Zimbabwe.**

**Source:** SADC Review. 2000. *The Official SADC Trade, Industry and Investment Review*. Southern African Marketing Company (PTY) Ltd. Gaborone. p270.

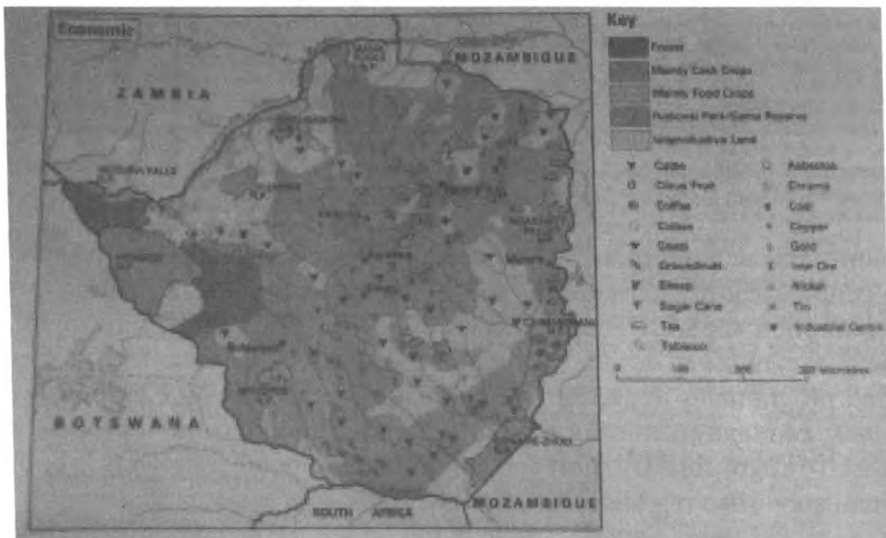
non-viable and unproductive zones more productive and viable in socio-economic cultural terms in the short-medium and long term. Within this conception, the SADC Food, Agriculture and Natural Resources Directorate, with a mandate to develop, promote, coordinate and harmonise policies and programmes in agricultural and natural resources on a sustainable basis, can lead to transformation in socio-economic cultural processes based on agro-forestry short and long-term development projects in both rural and urban regions (SADC Review, 2005: 46).

In concluding this sub-question, it is critical to note that sustainable agro-forestry policy in Zimbabwe could, by all scientific parameters, lead to specialised agro-forestry land use, punctuated by a progressive land reform that addresses both the subsistence and commercial needs of the population not only in naturally agro-climatically disadvantaged regions, but also in naturally agro-climatically favoured regions through various strategic specialised agro-forestry programmes. These specialised sustainable agro-forestry management strategic measures involve:

- specialisation of crop and animal cultivation based on physical and rainfall pattern and irrigation system,
- systematic exploitation of opportunities availed for short and long-term specialised agro-forestry infrastructure development within the North-South and South-South Dialogue,

- strategic partnership in subsistence and commercial agriculture and forestry development in natural regions I-VI,
- combined conservation and preservation efforts of the diversity of life of the savannah in Zimbabwe,
- promotion of optimum coexistence between flora, fauna and local communities through a well adjusted combination of the three corner principles of agro-forestry operations: viability, afforestation and robust tourism.

**Figure 3: Agro-forestry management in a context of agro climatic zones and relative spatial distribution of crop and animal farming in Zimbabwe**



**Source:** SADC Review. 1999. *The Official SADC Trade, Industry and Investment Review*. Southern African Marketing Company (PTY) Ltd. Gaborone. p 364.

- Agro-forestry resources transformation and challenges in land reform context 2001-2013.

Discussion of the sub question on “Agro-forestry resources conceptualisation in a context of agro-ecological zones in Zimbabwe” has provided both the potential strengths and threats inherent in either the recognition or negation of the reformative essence of the agro-ecological or climatic regions of Zimbabwe (Figures 1, 2 and 3 and Table 1) as the black empowerment land reform progressed through the 2000 decade. Of the over three million people or over 850 000 households in

the newly resettled farmers over the 2000 decade, checks and balances on the impact placed on agro-forestry development and compromise of the diversity of life of the savannah flora and fauna have not as yet been recorded or documented. This is due to the pronounced levels of functionality and coherence of institutions within socio-economic cultural life in rural and urban areas, across and in all natural regions I-VI.

Nevertheless, food security of the nation is judged by the extent to which Zimbabwe currently imports maize from neighbouring SADC member states, notably Zambia. If the land reform exercise, with all arguments either resonating or contradicting was pursued on a balanced scientific foundation, why then should the food security status of the nation be questionable as witnessed by mounting grain imports of thousands of tonnes from Zambia and other SADC member states and the international aid community? Distribution of crop cultivation in Zimbabwe characterises specialisation across agro-ecological or agro-climatic zones especially during the colonial era, but now only existing as a potential for revival of agriculture in the aftermath of the controversial land reform programme. In this postcolonial phase, Zimbabwe has to essentially retain its food basket status for Southern Africa through scientific management of the agro-forestry resources within a system of agro-ecological and climatic zones as a natural resource Zimbabwe is endowed with. Thus within a context of competent agro-forestry management, distribution of crop cultivation has a two dimensional character. Initially, there is an agro-climatic zoning specialised approach to crop cultivation, flora and fauna conservation and protection. Second, is the general scientific definition of land use classification, which a progressive land reform that nourishes North-South and South-South Development Cooperation Dialogue opportunities has to take into cognisance. As depicted in the initial dimension on agro-climatic zoning, crop cultivation is specialised in optimum combinations of cash and food crops in natural regions I to VI (Figure 1). With regards to the second dimension, general scientific definition of land-use classification, these are the zones, namely, forestry, mainly cash crop, mainly food crop, national park- game reserve and finally unproductive land (Figure 3). Physical geographical characteristics have also generated a specific pattern of rainfall distribution that has also, in turn, led to specialised crop cultivation but with the savannah diversity of flora and fauna specific to Zimbabwe negatively affected by the land reform, which had a hyper-acceleration over the 2000 decade, especially during the 2000-2005 phase.

In concluding this sub-question, it is critical to note that specialised agro-forestry land use, crop and animal cultivation, tourism, savannah flora

and fauna declines in intensity with movement southwards due to commensurate combinations of the physical and rainfall factors in Zimbabwe. More drought culture, crop, animal, wild flora and fauna though grossly depleted by land reform (which in the main was out of the jurisdiction of traditional chiefs as control was vested in District Councils), are found in the southern region. In this region, there are least rainfalls while cash crops and depleted savannah flora and fauna are also found in the northern and eastern region where rainfall is quite heavy. Nevertheless, the declining specialisation in crop cultivation southwards does not essentially mean that these regions are agriculturally or economically non-viable or that savannah wildlife, flora and fauna cannot be regenerated in these zones. What is critical in this post-colonial phase is adoption of a progressive and sustainable agro-forestry policy which actually triggers a progressive land reform that, in both subsistence and commercial terms and conservation of the savannah diversity of life, notably, flora and fauna, generates a new culture of coexistence of communities, wild life in a fast changing world. A maximum combination of the sustainable agro-forestry operations viability, afforestation and robust tourism in a context of North-South and South-South Development Cooperation Dialogue and the immense transformative opportunities it offers, have to be systematically exploited by way of comprehensive agro-forestry, rural and urban development plans.

Conceptualisation of sustainable agro-forestry transformative management within the Development Cooperation Dialogue creates advantages of fully exploiting the immense commensurate opportunities offered by competent international, continental, regional and national institutions. For instance, the SADC Directorates in Food, Agriculture and Natural Resources (FANR) and Infrastructure and Services (I&S) could immensely benefit sustainable agro-forestry development and a progressive land reform in Zimbabwe in the short and long term. Also one of the objectives of the, FANR among many others, is to develop and promote, coordinate and harmonise policies and programmes in agricultural and natural resources on a sustainable basis (SADC Review 2005: 46). Funds specific to these programmes are availed to SADC member states and Zimbabwe should not be an exception. With respect to the I&S directorate its objective among others is to develop and promote comprehensive, integrated and harmonised infrastructure policies, strategies, projects and programmes, (SADC Review, 2005: 52). All these SADC directorates have special fund, and expertise accessible by the membership to which Zimbabwe places a claim. Nevertheless, the land reform could be rendered a progressive transformation by subscribing

to the terms of reference of getting awarded funds and expertise for consolidating an institution for sustainable agro-forestry management.

The transformative essence of opportunities existing within the North-South and South-South Development Dialogue from which sustainable agro-forestry management in Zimbabwe could be developed, exists within NEPAD, SADC Directorates, SADC-RISDP and the UN MDGs. As alluded to above within the context of SADC – RISDP and (FANR) agro-forestry management and transformation efforts stand to benefit from the objectives on ensuring sustainable food security policies and programmes, development, promotion and harmonisation of bio-diversity, sanitary and phytosanitary, crop and livestock development policies (SADC Review, 2005: 46). Equally, benefits on facilitating transformation arise from the UN MDGs objectives as reduction of hunger and malnutrition, ensuring environmental sustainability and development of global partnership for development which closely links with efforts on promotion of sustainable agro-forestry in Zimbabwe (World Development Indicators, 2003: 6-13). These windows inherently lead to strategic development partnership between Zimbabwe as a low-income economy with other medium and high-income economies, which have already made advances, and are still registering advances, in agriculture and forestry development and management across all geographical regions. Competence in governance and prioritisation of the preservation and conservation of the savannah diversity of life, progressive land reform in all natural regions of Zimbabwe in a global context, will depend much on the optimum combination of the inward and outward orientation of plans, strategies and programmes. Moreover, it hinges on the recognition of the objective premise that agro-forestry management is a multi-stakeholder national and international category.

## **Conclusion**

In concluding chapter study it is critical to note that:

- the commissioned study, culminating in identification of a system of agro-climatic or agro ecological zones laid the scientific foundations for specialisation of agriculture and forestry management in Zimbabwe, especially rationalisation of the land reform programme, and the prerequisites for a speedy escalation of an independent Zimbabwe from a low-income to a medium and even higher-income ranking within the short-medium and long-term especially of Post 2015 New Global Partnership Program,
- spatial distribution of crop and animal husbandry, savannah diversity of flora and fauna southwards from the northern and north eastern

regions indicates declining productivity due to declining rainfall patterns and contingency agro-forestry programmes have to be adopted to ensure an optimum balance between the subsistence and commercial management and utilisation of the agro-forestry resources in a globalised world,

- commercial and subsistence agro-forestry transformation in arid and semi-arid zones of Zimbabwe, specifically regions IV, V and VI, is inevitable through exploitation of opportunities on agriculture, infrastructure and forestry development within the North-South and South-South Development Dialogue.
- specialised agro-forestry based value-addition industries and industrial complexes with a pronounced export orientation have a great potential in all agro-ecological regions through promotion of long-term complementary programmes on agro-forestry transformation in a context of abounding opportunities within a North-South and South-South Development Dialogue (Kalashnikova T M: 1982).

Finally, it is critical to note that the progressive historic land reform in Zimbabwe, in both subsistence and commercial terms, is sustainably realisable invariably on a short, medium and long term if the scientific foundations on the definition of agro-ecological and climatic zones inform it. Equally critical is to reiterate that sustainable agro-forestry management and development across natural regions I-VI (humid, semi-aridity, aridity and deserts) exist in the contemporary for not only transforming inhabitable and economically inactive regions and zones, but is a challenge for the revitalisation of the human innovative and creative capacity to transform and consolidate a new advanced civilisation in a fast-changing global environment.

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The main message contained in this book, *Land: An Empowerment Asset for Africa: The Human Factor Perspective*, is that access to, control, ownership and utilization of land and land-based resources are key to Africa's total empowerment. But land and land-based resources on their own will not empower African people. What is required is that the people themselves must utilize these resources to their own benefit. Empowerment will not be faxed or e-mailed from somewhere else.

What Africa needs are not just people with their skills and high qualifications, but people who believe strongly in the ideals of Africa, affirm and practise them at all times.

The book makes a contribution to the Human Factor Perspective whose main claim is that development is people-centred and such a development approach must produce significant improvement in the livelihoods of the people of Africa.

The book's readership is diverse. The purpose is to make it of special appeal to students, lecturers, researchers and policy-makers.

#### **ABOUT THE EDITOR**

Professor Claude Gumbucha Mararika is a lecturer in rural development and indigenous knowledge at the University of Zimbabwe. He has written widely on rural development, human factor development and indigenous knowledge.

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