

A Paradaigm Shift from Creative Destruction to Creative Reconstruction: Rethinking Africa's Sustainable Integrated Development Future with Innovation System Approach

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Overview

- Inspiration
- Problems of African Economic Development
- From Creative Destruction to Reconstruction
- The Precursor to NSI: Friedrich List's Theory of Productive Power to Africa
- Applying National System of Innovation to Africa: Theory and application
- Suggestion for a new research direction
- Concluding Remarks

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The main objective

- Africa has been rejected by those who have had leadership bestowed upon them to develop those places that have already developed. The question is: can the Africa the builders rejected become the cornerstone of the arch?
- Chris Freeman says 'yes' in our book : Putting Africa First: the Making of African Innovation Systems, Aalborg University Press, 2003)!
- This positive spirit enjoins us to search for a more robust theoretical alternative that is open to reinstating in some way the core issues of what should be the African quest for sustainable development futures with structural transformation.

Appreciation

- SPRU@50 Celebrating the Jubilee with African engagement is truly inspiring
- SPRU advocates STEMI4D and selecting Africa as the site for pursuing this research journey is most welcome
- Chris Freeman's Economics of Hope is needed to un-economics economics to re-economics economics with human and nature wellbeing. Johan Schot has done original work in linking STI with sustainability. A new paradigm shift is needed. SPRU can use its jubilee to re-launch this new research journey!

Inspiration

- “The three principal reactive-reactionary theses are, which I call the perversity thesis or thesis of the perverse effect, the futility thesis, and the jeopardy thesis. According to the perversity thesis, any purposive action to improve some feature of the political, social, or economic order only serves to exacerbate the condition one wishes to remedy. The futility thesis holds that attempts at social transformation will be unavailing, that they will simply fail to ‘make a dent.’ Finally, the jeopardy thesis argues that the cost of the proposed change or reform is too high as it endangers some previous, precious accomplishment.” (Hirshman, 1991, p.7)

Inspiration

- I should add to Hirshman’s three theses, a fourth one: and that is what people often say when I argue for an integrated African national economy, they say it is too unrealistic and even illusory. Thus I encapsulate their worries as the ‘illusory thesis’, which says that the pursuit of African integration and/or nationalism is too pie in the sky dream, fantasy, utopian, unrealistic, which distracts from taking realistic incremental actions and thus by foreclosing such options becomes itself dangerous!

Inspiration

- So I plan to do the dangerous thing of arguing for an integrated African national economy by applying the appreciative theory of systems of innovation to make it
- The only risk to avoid is not to take risk, even if that may lead you to land in ridicule!
- Africa is the future ..
- Without unity there is no future for Africa
(Mwalimu Julius Nyerere)

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Inspiration

- Integrating Africa or making the Africa nation itself is an evolutionary problem of dynamics, of creative destruction, requiring evolutionary approaches to understanding and creating knowledge
- Look for concepts that can be appropriated to fit with what Africa has to do to survive in a difficult world.
- The main development problem is to integrate Africa: to imagine the Africa nation and make it!

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Africa is Huge!

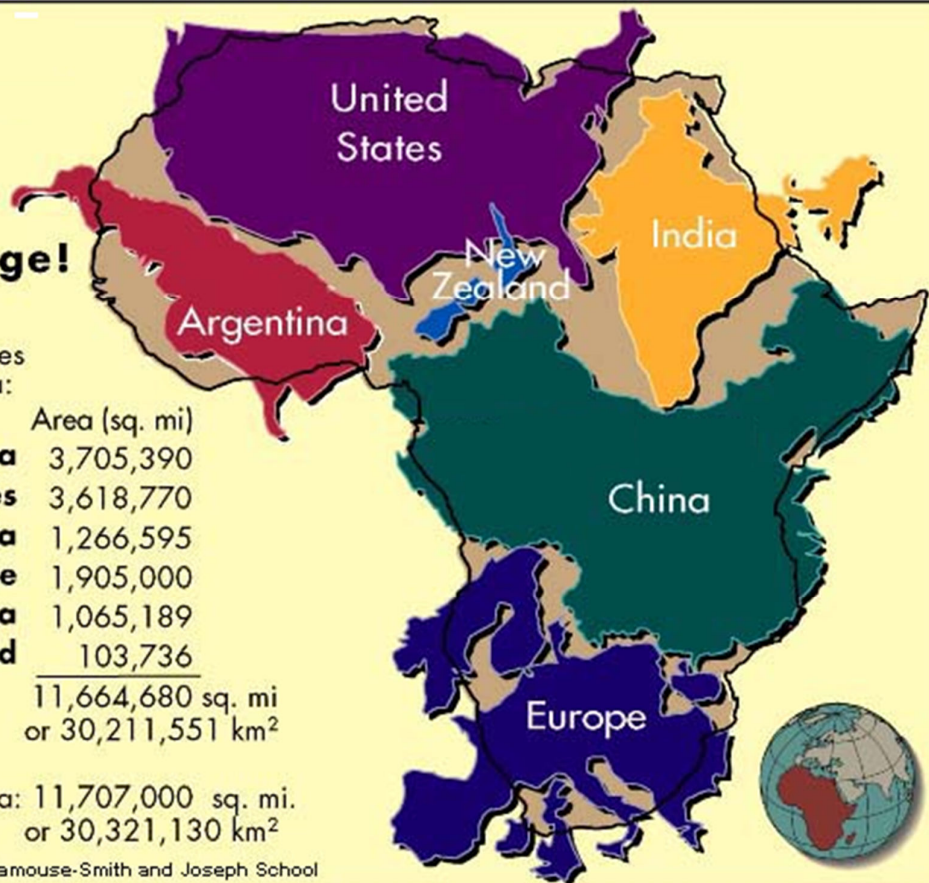
The following countries could fit within Africa:

	Area (sq. mi)
China	3,705,390
United States	3,618,770
India	1,266,595
Europe	1,905,000
Argentina	1,065,189
New Zealand	103,736

11,664,680 sq. mi
or 30,211,551 km²

Africa's area: 11,707,000 sq. mi.
or 30,321,130 km²

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2. The problems of African development

- After half a century of colonial freedom: Africa as a continent is said still to have an economic size less than the economic size of France!
- Sub-Saharan Africa's economic size is said even to be less than the economic size of Holland!
- Yet there are 54 states, 54 policies plus the unwelcome imposition of often the 'one size fits all policies' from outside that most of these states do not seem able to avoid or afford, or can reject if harmful!

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Moving from Creative Destruction

- Changing 54 noises into one voice
- Stopping 6 times more resources flows out of Africa annually
- Africa is a donator not being donated
- Learning to break the global value chain
- Convert the wealth for wellbeing
- Link African values for creative reconstruction

2.1 Problems of African Development

- Politically...formal independence without an African agency
- Economically... Continued fragmentation means dependence will still continue, poverty and insecurity too!
- Intellectually : knowledge creation and use often not geared to bring about structural transformation of an integrated African economy
- Integrating research, training, creativities, governing, producing and circulating within an Africa wide economic system not in existence yet
- Creation of an African national system of production and consumption: a major challenge
- Linking academy, industry, government and labour on an African scale and scope often talked about but not implemented.

2.2: Two Directions: Integration vs. nationalism

- Current approach is to try to coordinate politics at the continental level through OAU-AU
- Economics via NEPAD and regional Economic groupings of the existing states
- Alternative approach is to promote African nationalism(Making the Africa-nation)
- Build on the Pan-African ideals, the historical legacies and movements and project

2.3 The two approaches are divergent

- Integration tends to be mainly economic, instrumental, pragmatic and functional
- Integration encourages exchanges in relation to trade, investment, knowledge and when possible migration
- African nationalism is built from a desire to create the Africa-nation to fulfil the original purpose for Pan-African liberation and unity!

2.4: African integration

- Over 200 integration schemes, but no recognisable and substantive integration yet!
- The question is whether or not Africa is indeed integratable,
- Can it be integrated?
- And how can it be integrated!
- And at what spatial and economic levels?
- And how to harmonise and standardise these uneven levels?

2.5: Argument for Integration

- There are compelling reasons for regional integration in Africa. Among other reasons, Africa is threatened with further marginalisation in the global economy;
- It has fragmented populations with only 5 of the 53 countries on the continent having a population of more than 30 million and over a quarter with a population of less than 3 million.
- Integration is said to create bigger markets and stimulates large scale production (Nyong'o 1990: 12).

2.6: Arguments for Integration

- Integration is said to help mitigate Africa's dependence on the world economy, its status as a supplier of raw materials and an importer of manufactured goods (Asante 2007: 29).
- Regional integration insulates Africa's nascent industries against international competition. For these and related reasons regional integration is said to be necessary. Integration holds the key to unlocking the door to Africa's development (Akokpari, 2005)
- Regional integration may minimise Africa's dependence on external donors.
- Africa's hope may very well lie in a development model that minimises such dependence on external actors.

2.7: Problems of Integration

- The need for African Integration- rich in rhetoric, but dismal failure in taking even a few actions to do actual integration except for the natural cross-border ones!
- Hypocrisy: The EU's 2005 strategy speaks of a 'one Africa' framework for its EPA whilst continuing to differentiate its policies to different states and regions within Africa!
- Lack of organising conception for Integration

2.8: Problems of African Integration

- 15 African countries are landlocked and transport and communications links on the continent still rudimentary.
- Markets too small to attract investments and too balkanised to generate meaningful economies of scale (Only 5 have a population of over 30million.) (8 have less than 1m each; and 14 between 1-4m)
- As a single economic sphere, Africa has a potential market of over 700m, a natural resource base of huge dimensions and a diversity unsurpassed by any other continent on the planet.(see map before)

2.10: The Current Regional Integration Picture

- Intra-regional Trade in Africa as a share of total trade has been low compared to other regions: only 8.4 % in 1993 for Africa, 69.9 % for Western Europe, 49.7 % for Asia, 33 % for North America, 19.4 % for Latin America (WTO Sources quoted in McCarthy, 1995, p.21)
- Economic context unfavourable (macro economic disequilibria, foreign debt service burdens, over-valued currencies, lack of trade finance, narrow tax base. Economic cost of participation higher than anticipated long-term gains.
- The economics of distribution in allocating hardships and benefits not seen as fair or even handed both procedurally and substantively

2.11: Why is integration slowing?

- Dependence on former colonial powers
- State driven, with little participation of private sector and civil society
- Institutional weaknesses
- Too many regional organisations
- Overlapping memberships where 26 states are members of a number of regional groupings
- Weak states, failed states
- integration is often intergovernmental, not supranational

2:12 : If Regional Integration is to Continue...

- Harmonisation, streamlining and restricting membership to one regional grouping: e.g. One country Tanzania should not be a member of East African Federation, COMESA, SADAC and so on.
- Creates loyalty and commitment problems!
- Must begin to simplify regional membership!
- African integration cannot imitate and must necessarily be different from that in Europe, East Asia and the Americas.
- It is 'African-African' integration of economies with weak industrial bases which, are generally reliant on agriculture and have relatively low levels of intra-regional trade.

2:13: If regional integration is to continue

- Issues such as improving competitiveness, integrating markets through trade liberalization, harmonizing monetary policies, and promoting private sector investment demand focus in existing types of integration
- For all this to happen a recognition that expanding and interconnecting Africa's infrastructure would be critical.
- The role of pivotal states has to be recognised:
- South Africa, Nigeria and Egypt have sheer market size and industrial base,
- Can have a special role to play in pushing regional integration, but others may not buy into this role for these countries
- These countries certainly have potential to act as poles of growth,
- and/or lead the way, whereby it is possible for certain states to proceed on an accelerated track of regional integration.
- They must be willing, others must also be willing to recognise a role for them! Not easy to do so!

2:14: Some of the Challenges

- Developing Institutional and human capacity.
- Recognition that almost all of the big issues confronting Africa – and certainly the regional trade and investment issues – require stronger and more financially viable subregional and regional organizations.
- Social psychology of the elite still problematic: Fanon calls the elite 'useless.'
- Elite often said to lack moral intelligence and existential seriousness
- Sustained political commitment to take politically difficult rationalization steps, which only the brave leaderships of national governments can see through.

2:15: Regional Integration: to continue or not Continue!

- Regional integration will continue
- It will not stop
- But the success from it is not reassuring
- If we judge by the way it has gone to date
- Alternatives should continue to be explored
- As the stakes are high!

The existing States as they are

- They are not successful either, they too continue!
- See a glimpse at the Economist Pocket World in Figures 2008 why they are not!
- No Sub-Saharan African country included in the biggest economy or purchasing power, except for South Africa
- Amongst the lowest regional GDP, regional purchasing power, international trade
- 16 African states out of 19 states have lowest GDP per head, and 16 out of 18 have lowest purchasing power
- Only Libya and Equatorial Guinea have been mentioned in the highest GDP per head category

The existing fragmented states

- Quality of life measured by HDI only Libya (79.8) and Mauritius(80) in 2004
- HDI below 45- all from Africa: 18 African countries!
- Similar picture emerges wrt to economic freedom index, gender-related development index
- A few countries in the highest economic growth category for 1995-2005, many in the lowest category
- And the depressing statistics go on...

The Lesson to be drawn

- Something new must be tried
- Change is necessary
- The post-colonial balance sheet shows bold steps need to be taken
- Fresh thinking, thinking big, thinking deep and thinking with commitment necessary!!
- Fresh reconceptualisation

2:16: Possible Alternative: build African nationalism in a new way!

- African nationalism follows logically from Africa's specific experience and history(past) and the project to transform the economy structurally from its fragile state into a self- sustaining robust state (future)!
- A recognition of Africa's experience and history implies locating the core of its development in the dynamics of uniting to freeing Africa
- African nationalism is one of the few things that remains to advance Africa's independence, agency and post-colonial freedom.

2:17: The Concept of a nation!

- Nation is more than a community of origin; it is now a community of opinion and purpose.
- It is an imagined community (Anderson)
- Provides a 'logo' for a project and the shared imagination to shape a sustainable future and come out from an equally sustained assault and mutilation to the personality
- Between each individual and entire humanity stands the nation (F. List,1856)

2:18: Definition of nationalism

- "Nationalism is an ideological movement for the attainment and maintenance of autonomy, unity, and identity on behalf of a population deemed by some of its members to constitute an actual or potential nation" (A. D. Smith)
- "The consciousness of self is not the closing of a door to communication. Philosophic thought teaches us, on the contrary, that it is its guarantee"(Franz Fanon)
- "The first rule that we must follow is that of national character. Every people has, or must have, a character; if it lacks one, we must begin by endowing it with one." (Rousseau)

2:19: What African Nationalism Can Mean?

- An urge to be liberated from the colonial authorities and their power and gaze,
- a recognition of one's fitting into a familiar group.
- a fervent remonstrance against foreign domination,
- a craving for self-governance and independence,
- An insistence on ubuntu- African humanism and solidarity
- a denunciation of the belief that Africans are second-rate,
- A willingness to confront and resist historical injustice and humiliation that comes indiscriminately to all with African origin in them in some form or variety!

2:20: African nationalism can mean?

- The composition of an African personality from colonial mutilation;
- And to forge a shared striving from post-colonial donor dependency
- A means of achieving social, political, economic and cultural renewal, development and transformation
- A rejection of Afro pessimism and a striving to make a shared future with Afro-optimism
- An African project, passion for launching Africa on a pathway to taking it into the 21st Century;
- The aspiration to the African right and opportunity that it can develop and shape its future!

2:21:What African nationalism is not and cannot be?

- African nationalism is thus not negative, militaristic, chauvinist or power-driven! It should be example driven- from oppression, people and nations can attain full dignity and humanity through solidarity and justice.
- None of the imperial trappings should be associated with the African national project.
- It is above all a defining identity to make Africans and Africa move alongside the rest of the peoples of the world unhindered by prejudice, the past, stereotyping and other historical ills that, sadly, Africa continues to suffer to this day-as the 'scar on the human conscience' (Blair)
- It is a nationalism with respect to the production of free will and equal opportunity for Africans and Africa with the rest!

2:22: African nationalism and Development: framework or thematic deficiency?

- Any theorising that ignores Africa's experience and history in its theoretical arsenal is likely to be more of a problem than help to bring Africa's independence and transformation.
- For example, development economic theories ignored largely Africa's specific context including its experience, history, purpose, sentiment, passion and project, and dealt mainly with existing divergent interests as they are and not even as they should be, and thus are said to have lost sight of the core issues to formulate relevant policies to facilitate African development

2:23: The Thematic Deficiency Development School

- Amartya Sen acknowledged what he calls 'thematic deficiency' at the core of development economic theorising
- Mainly in the way such theories have ignored core issues of development
- That Sen thought should not have been ignored!

2.24: Sen's Attempted improvement

- He argued concentration on national product, aggregate income, total supply of public goods, capital accumulation, the creation of surplus may be necessary but not sufficient to get development that includes the least advantaged.
- He stressed entitlements of people and capabilities these entitlements generate as the relevant thematic choices for development economics.
- Sen said the process of economic development has to be concerned with what people can and cannot do or to use his words have reason to value and choose to do!

3.0: List's Theory: the Nation is the relevant Framework for Development!

- Sen's capability-building theme seems to resonate with List's theory of productive power!
- However Sen's capability is built on the premise of the economy of the individual and List's productive power is to improve, progress and develop a nation!
- For List economic development – is in reality the analysis of the economic progress of nations – in reality that appears to be what economics as a whole is designed to be about?
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A Brief Outline: Friedrich List's Theory

- The theory of productive power by List can provide a fresh thematic extension to both Sen's capability theme and help to address the deficiencies in development economic theories!
- The merit of his theory is that it starts by affirming experience and history of nations rather than beginning with abstractions such as industrialisation, planning, capital accumulation and utilising the underemployed.
- It contextualises its theory of productive power with the idea of not only the national interest but also the national passion, national sentiment, and the national purpose, national project!

List's Justification of his theory

- His theory of productive power can be built as providing a core theme for development
- Individuals, nations and humanity are distinct
- The sum of individual interests is not to be equated with the interest of a nation (1856:74)
- Social interests diverge from private interests (ibid.:245)

List's Justification

- The economy of the individual is different from the economy of the nation, and the economy of the global human interest is different from both (p.vi)
- Some nations can be concerned more for their national welfare than the welfare of humanity!
- So they can choose expanding productive forces through protection than expanding global welfare through free trade
- They preach free trade, but they practice protection!
- Could it be that what was in the interest of England is thought to be in the interest of the world, List protested!

List's Justification

- The production based economics (List) vs. Exchangeable values and allocations through international trade (Adam Smith of the Wealth of Nations) have different development outcomes!
- Trading in cooked and manufactured vs raw and agricultural goods not the same thing!

List's theoretical justification

- Theory of productive power is more than commodities, money and factors of production or natural advantages
- It is above all a realisation that division of labour presupposes national unity, national independence, a shared project and cooperation of productive forces (p.74)
- List was castigated as " a dangerous enemy on account of his endeavouring to rescue his country completely from the manufacturing monopoly of England (ibid.viii- translator of American version of List's tome!)

List's strategies

- Industrialisation and manufacturing to be driven by a capable nation and state
- Incentives to those who take risks of creating new industries
- Building the capital of the mind and training and spreading education to cover comprehensively the nation as a whole
- Choice of industries for protection on the basis of knowledge, experience and linkages with the rest of the national economy (p.69)
- Development of agriculture necessary to industrialise

List's strategies

- Industries of luxury to receive attention until in the last phase(p.392)
- Trade is an instrument of development, progress and independence (ibid.)
- Protection is also a means to development, independence and liberty for free trade (p.64)
- Improving, developing and preserving the nation is the principal purpose of a nation(p.70)
- Supported regional integration of German cities and the union of interest of various states such as Belgium, Denmark, Holland and Hungary!

List's Racism

- He did not believe climatically hot countries can industrialise! Means mainly Africa!
- Only the temperate climates can make it!
- But this side of his view, of course, is not to be taken seriously!
- Paradoxically there is much in his theory that is useful for Africa!!!

The Puzzle for Africa

- The national system of innovation concept derived from the Listian tradition in the context of Africa may be a 'provocation'
- In the context where the 'national' in Africa is not well defined!
- In the context where 'institutions' do not function with a predictable system and rationality
- Where learning and capability are not mobilised to advance African transformation with deliberation and focus!
- Where the misplaced focus on thematic deficiency underemphasises framework deficiency that is the root of misplaced theorising wrt Africa!

Summary of List's Main Ideas

- List is right in his claim that a national political economy facing constraints needs to find a way to organise transformation!
- Those that trade in raw materials and agriculture remain underdeveloped
- Those that build productive power have made it (e.g. USA, Germany, Japan, East Asian Tigers)
- The lesson is clear: if a nation wants to develop, it has to organise its national system of political economy with a logic of stimulating rapidly and comprehensively productive power.
- Otherwise it can have very rich minerals and agriculture and territorial size, but will remain underdeveloped!

Looking for theories

- *The scepticism on innovation systems is understandable given that the available coordinating mechanisms such as the market, the state, the firm and others tend to operate in a way that may not facilitate symmetry and systems.*
- *However, the system perspective is important as a focusing device to conceptualise, identify and select from the range of emerging forms of possible interactions, variations that are either emergent and to be made yet or already made, efficient or inefficient, strong or weak, necessary or contingent for generating outcomes and impacts on national economic development, productivity, competitiveness and overall better long term economic performance.*
- *In other words different innovation systems can be correlated with different outcomes and impacts on performance, productivity, competitiveness, capability, learning and competence or any combination of them.*

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Theory development

- *If we proceed with the search and selection of an alternative framework that employs evolutionary economics and innovation systems perspectives on the problems of development and underdevelopment in Africa, it comes with the opportunity and need to advance theoretical knowledge further for empirical research framing and policy learning and application.*

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Theory search

- ...to develop, Africans need to engage in the dynamics of acquiring **Existing** knowledge and make **New** knowledge themselves
- In fact to acquire better and better existing knowledge Africa must build its own R & D capability also.
- It is not either acquiring the existing or making new.. It is making to acquire in order to make new and build on a continuous spiral enhancing a simultaneous mutuality in the practice and the understanding(Ibid.)
- It is both know how as practice and the learning and understanding to create novel practices that recreate more and better learning that continues in time and space!
- This innovation culture needs to be embedded to promote development on a continuous basis

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Theory search

- We need not only the words but also to discover the grammar to grasp African entity in its current largely fragmentation-dependence state in order to transform it into the being of an enabled self-sustaining capability building systemic dynamics to re-launch and re-design the African development agenda on a secure pedigree.

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Applying System of Innovation to African Integrated Development: The theoretical Challenges

- *“A theory defines the economic variables and the relationships that are important to understand, gives a language for discussing these, and provides a mode of acceptable explanation”(Nelson & Winter 1982.p46).*
- *When theory provides a ‘framework for appreciation,’ it serves as a ‘tool of inquiry’. The focus is on the ‘endeavour in which the theoretical tools are applied’(ibid.) In formal theory, “the focus is on improving or extending or corroborating the tool itself...” (ibid.).*
- *Formal theory is a source of ideas for appreciative theory and the vice versa. In general, drawing linkages or connection between these distinct forms of theorising can enrich understanding of economic enquiry.*

Formal and Appreciative Theory

- *Nelson and Winter have proposed boldly an innovation framework to economic theory as an alternative to neo-classical framework (Nelson & Winter, 1982: 128-130) building on earlier criticisms of mainstream economic thinking mainly from the writings of Veblen (1909), and Schumpeter (1911, 1942) on modern dynamic economic theory building.*
- *Today it appears that the formal theory is mainly pursued by the evolutionary economists.*
- *Appreciative theories based on empirical studies and research for policy selection or application has been pursued by the national innovation system perspectives and others in institutional and business economics. It seems to us there has been a proliferation of the appreciative variant of theorising as part of the generation of the alternative framework on the economics of innovation.*

Formal and Appreciative Theories

- *There appears to be a sort of unwritten division of labour between the formal and appreciative theory where the formal theory of economic dynamics is dominated by evolutionary economists, and appreciative theorising is largely populated by those who are empirically and policy orientated.*
- *It is not clear how much significant interaction and learning takes place between the formal theory and appreciative theory with mutual gain to each other.*
- *Formal theory concentrates mainly on economic structure. Appreciative theories focus mainly on system of innovation actors in their role in the processes of the development of economics of innovation dynamics and systems.*

Formal and Appreciative

- *Issues that seem to preoccupy much of the economists hoping to create an alternative to the main-stream neo-classical economic framework appear to be understanding economic growth; short term and long term economic firm level and/or national performance, micro and meso level competitiveness, firm and national level productivity, economic catching up, learning and knowledge creation and absorption in a given economic structure, and inter linkages between firm competitiveness and national competitiveness and productivity, symmetry and system building such as national, sectoral and other types of innovation systems.*
- *Since innovation is characterised by the process of creating and destroying, some economists including Veblen earlier on have not been open to the notion of innovation systems and symmetry. They focus more on asymmetry and system breaks than makes, associating innovation more or less with a dynamic that disrupts systems and symmetry rather than the opposite.*

Formal and Appreciative

- *The scepticism on innovation systems is understandable given that the available coordinating mechanisms such as the market, the state, the firm and others tend to operate in a way that may not facilitate symmetry and systems.*
- *However, the system perspective is important as a focusing device to conceptualise, identify and select from the range of emerging forms of possible interactions, variations that are either emergent and to be made yet or already made, efficient or inefficient, strong or weak, necessary or contingent for generating outcomes and impacts on national economic development, productivity, competitiveness and overall better long term economic performance.*
- *In other words different innovation systems can be correlated with different outcomes and impacts on performance, productivity, competitiveness, capability, learning and competence or any combination of them.*

Formal and Appreciative

- *Regardless of whether system building or not occurs in real economic systems, the national system of innovation perspective has been popularised. It has constituted perhaps a significant development of appreciative theorising.*
- *The degree to which micro-level firm innovative capability, performance and competitiveness can be aggregated to contribute to national innovative productivity, performance and competition has been analytically contentious.*
- *Globelics has combined together knowledge, innovation, learning and capability building and suggested research applicable to the problems of development and underdevelopment by translating innovation systems into :’ learning, innovation and capacity, capability and competence building systems.’*

Theory development

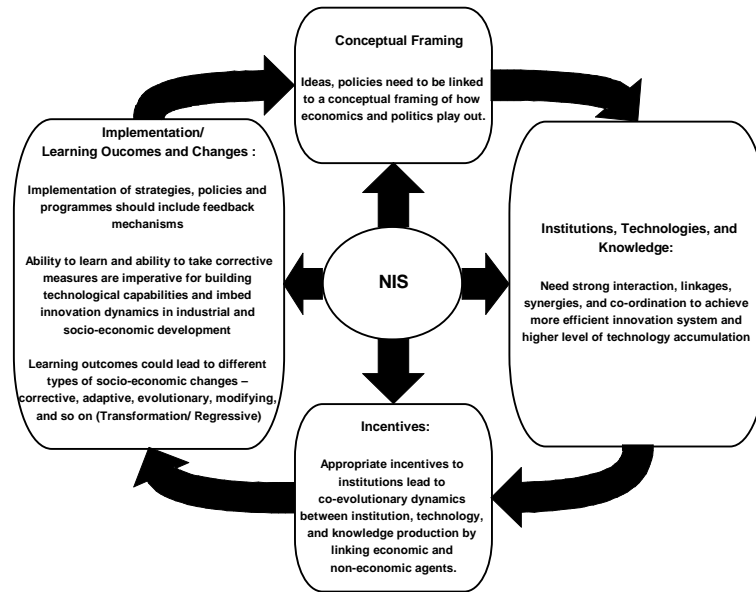
- *If we proceed with the search and selection of an alternative framework that employs innovation systems perspectives on the problems of development and underdevelopment in Africa, it comes with the opportunity and need to advance theoretical knowledge further for empirical research framing and policy learning and application.*

4.0: Applying National System of Innovation to Africa

- We are not saying the African NSI exists!
- We are saying the national innovation system has to be made in Africa!
- We are not dealing with an already made situation
- We need economic theories that can stimulate and assist original research

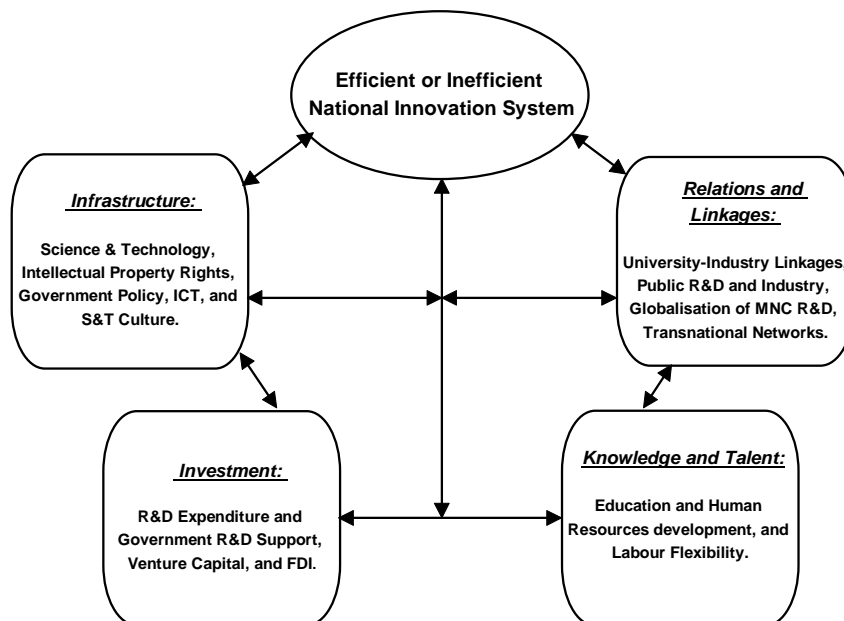
National Innovation approach

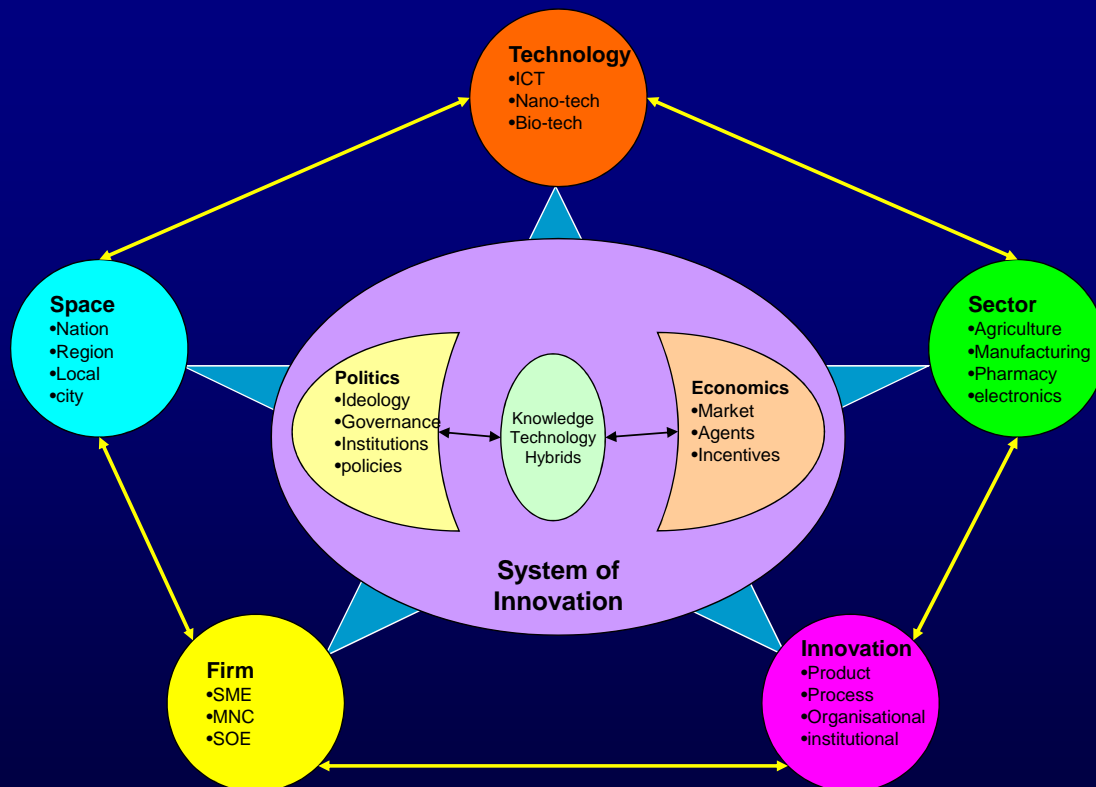
Figure 1: Major Elements of National Innovation System (NIS)



Linkages for Co-evolution

Figure 2: Linkages between Institutions, Technologies, Knowledge and Incentives in NIS





Unifying model of SI

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Innovation Systems

- Stimulate and understand inter economic and non-economic actor interactions and dynamics,
- Co-evolution of economic and non-economic governing institutions, practices and understanding (Richard Nelson)
- The interaction of policies, knowledge, incentives, institutions, practices and the understanding involved in the process
- System building, to identify significant interactions and interfacing of parts,
- Bridge the gap between theory and reality,
- The sources and organisation for stimulating innovation, imagination and creativity, learning and competence building
- To understand how routines are formed and novelties emerge and prepare and design policy frames!

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System of innovation

- Integrating Africa or making the Africa nation itself is a problem of dynamic innovation systems, of creative destruction, requiring systemic approaches to understanding and creating knowledge in interaction with policies, institutions, system of innovation actors, incentives
- Innovation systems are useful to assist in stimulating how an African unity can be forged!
-

System of Innovation

- If Africa has to survive in a difficult world, it needs to apply new tools to assist its build up of its future!
- For example if the main development problem is to integrate Africa or to imagine the Africa nation and make it, then NSI is useful!

Danger: Appropriation or Mimicry

- We know theoretical and empirical work mainly done for developed economies using the NSI may not be appropriate!
- Appropriation is legitimate if what is learned is how this has been done, and why it has been done the way it has rather than copying what is done well!
- The problem is how to use the NSI to do a research diagnosis on Africa's economics now and its likely evolutionary trajectories

Danger: appropriation or mimicry

- We are not going to use ready made formula but explore the evolution of Africa's economic system as it is in order to find better ways of stimulating structural transformation
- No need thus to engage in controversy on whether to apply NSI or not!
- Some suggest important revisions may be needed
- Others say that radical modification not needed.
- For me this is a non-issue...to develop, nations need to engage in the dynamics of acquiring **Existing** knowledge and make **New** knowledge themselves (Richard Nelson)

Acquiring and making

- In fact to acquire better and better existing knowledge they must build their own R & D capability also.
- It is not either acquiring the existing or making new.. It is making to acquire in order to make new and build on a continuous spiral enhancing a simultaneous mutuality in the practice and the understanding(Ibid.)
- It is both know how as practice and the learning and understanding to create novel practices that recreate more and better learning that continues in time and space!

Why the NSI for Africa?

- A national system of innovation to promote a national system of production
- To enable a system creation to produce what Africa consumes, and to consume what Africa produces
- To create Africa...wide producers and users interactions (Lundvall:85)
- To embed knowledge creation,innovation, learning in Africa's institutions,societies
- To inject a total learning and innovation culture in Africa
- To retain African resources to stimulate African development

5.0: The Research Challenge for Africa

- The economy of the nation
- Systems
- Co-evolutions
- Interactions
- Innovation
- Learning
- Competence building
- The organisation of productive power
- Africa..nation
- Integration
- Structural transformation
- Forging equitable relation with the world economy
- Agency and independence
- capability accumulation

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The Research Orientation to Decline

- Continue to search for solution within the existing arbitrary arrangements as they are in Africa now
- That continues to engage, interrogate and critique them
- That tinkers with fragmented Africa
- That does not question dependence,
- Continues to taken the fragmentated status of Africa as 'normal'
- Fashions ideas and policies without questioning such fragmentations
- Blames Africans when conceptual and policy results show more poverty creation than wealth creation

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6.0: Concluding Remark

- Not all the states in Africa can catch up as they are now!
- Not sure even if they can catch up even if regrouped as regions
- Important to emerge united to deal with a world economy and respond to its many challenges.
- No alternative to learning and the social innovation of uniting, if Africans and Africa are to attain full dignity and humanity.

Concluding Remark

- Fragmented states— can they succeed as they evolve now?
- Regional integrations, can they succeed?
- Pan-african liberation.. What chance for it to be recentred?
- African unification through Africa integration or African nationalism?
- What of the AU, Nepad processes?

Concluding Remark

- A theory of African economic development that confronts the key challenges of integration of economy, society, knowledge, policy frame, institutions, economic and non-economic system of innovation actors and incentives
- Interaction and communication of those forming the system to produce developmental output, impact and effects that serve as further input in a feedback loop that recreates and regenerates sustainable path to development
- Forging a national Pan-African framework for unity, stimulating the African Renaissance, strengthening the AU/NEPAD, for the free acting and free association and for the self-organization of communities at various levels
- Which the imagination, logo and making the Africa-nation can stimulate and encourage rather than restrain!
- By creating a vibrant African public sphere for free and un-fragmented citizens!

Concluding Remark

- This theory of African development is likely to emerge with a controversy and debate with the available theories.
- What Africa suffers is not thus from a thematic deficiency in diagnosing its development problematic.
- Instead it suffers from the irrelevance of the framework that ignores its specific experience, history, project and dream to design and develop with post-colonial freedom and agency- that remains to this day its core problem!
- Can NSI help where other theories have failed Africa? That remains a big question.

The Last Word for K.Nkrumah!

- *"If we are to remain free, if we are to enjoy the full benefits of Africa's rich resources, we must unite to plan for our total defense and the full exploitation of our material and human means in the full interest of our people. To go it alone will limit our horizon, curtail our expectations and threaten our liberty." Kwame Nkrumah*

*Asante Sana, Amesegegenalehu, Thank you —
Mammo Muchie:www.sarchi-steid.org.za*