MIDDLE NIGER NICHE SPECIALIZATION: THE PREHISTORIANS' DEEP-TIME DILEMMA

Roderick J. McIntosh, Anthropology, Yale University

Introduction: Too Late, Too "Primitive", Too Urban

In his recent paper presented to the Agrarian Studies Program, Graeme Barker (2008) nicely summarized the history of theories about the emergence of food production. He also framed the dilemma facing the prehistorian of West Africa's Middle Niger, where domestication appears genuinely to have been late (compared to other Old and New World "centers") and where, today, the various peoples occupying the 50,000 km^2 Middle Niger today maintain a remarkable diversity of subsistence practices (and resistance to agro-industrial mono-cropping). That diversity extends to their seed and stock portfolios. Farming purposefully includes a heavy reliance on gathered wild plants, even during the good years.

In the prehistoric past and today, Middle Niger peoples studiously avoided "infrastructural intensification" (high labor inputs in any particular plot and, especially, almost all forms of water control or water management centralization). Yet the Middle Niger sustained an astonishing network of millennia-old cities. Rural settlement density was also impressive; however, much demographic growth was focused upon high-density settlement clusters occupied by subsistence and artisan specialists (R.McIntosh 1993, 2005; S.McIntosh 1995, 1999b). Most notably, these communities eschewed "higher" forms of political hierarchy, those despotic power structures often considered a signature of ancient "hydrologic" arid-land floodplain civilizations – while apparently nurturing a profound corporate sense of niche specialization.

An earlier theory of Agricultural (or "Neolithic") Revolution held that domestication lead to new kilogram yields/hectare/kilocalories of labor expended and once a threshold (let's call it the Kg/Ha/Kcal threshold) was passed, revolutionary changes to the human condition were essentially inevitable and irreversible (sedentarism, population expansion, pottery, etc.). The persistence of a collected (and,

indeed, protected) wild component to the Middle Niger crop portfolio and the heterogeneity of subsistence practices clearly are at odds with that theory. The alternative view that developed in the 1960s and 1970s, namely that hunters and gatherers of Marshall Sahlins' "Original Age of Affluence" had to be pushed to a more labor-intensive and less salubrious farming way of life by population pressure or climate change – also appears at odds with the Middle Niger data. The Sahel boasts, arguably, the planet's most unpredictable climate. But few models of ancient risk management (see below) would predict the extreme corporate specialization, the avoidance of intensification and water management, and the resistance to political centralization (and especially to the hierarchical state) that characterizes the deep-time history of one of the world's great arid-land floodplains. Pulled over the Kg/Ha/Kcl threshold to farming or pushed away from an idyllic hunting-gathering existence by external pressures – neither argument seems to apply to the Middle Niger case.

The resolution of this dilemma lies in niche specialization. Elaborated over the very long-term, developed somehow in response to the enormous potential productivity of the floodplain and surely responding to the Middle Niger's extremes of inter-annual (and longer scales of) climatic variability, niche specialization is our key to understanding ancient sustainability (defined here as "…maintaining, or fostering the development of, the *systemic contexts* that produce the goods, services, and amenities that people need or value, at an acceptable cost, for as long as they are needed or valued" (Allen et al. 2000:26), that is, a society's ability to maintain a desired way of life).

I will argue here that niche specialization is intimately mated to high subsistence activity diversity and to (an implicit) management of high biodiversity of the landscape (see R.McIntosh 2004). Forgive me, therefore, if I stray briefly to the functional side of the niche specialization calculus, to a primer on the extraordinary productivity of the Middle Niger – and on why deeply engrained local practices that allowed such productivity were the subject of such frustration and disdain to French Colonial agronomists and administrators. [This will set the stage for a final prehistorians' dilemma, with which I'll end this paper.]

Gallais (1967; 1984) provides the best description of the intersecting farming, fishing and pastoral

groups of the 50,000 km^2, false-deltaic interior floodplain of the Niger, and of their highly tuned subsistence practices. S.McIntosh (1999a; 1999b) provides an analysis of the archaeological implications of the floodplain's ethnic-cum-subsistence mosaic, high climatic unpredictability, and "raw" productivity of the land. As recently as the last millennium B.C. (and perhaps into the first millennium of the Present Era), the urbanized Middle Niger covered some 170,000 km^2 (compare this with the 51,000 km^2 inundated Mesopotamia and 34,000 km^2 Nile Valley). Many present landscape attitudes and subsistence practices surely have their origin, with modification, in long-term experience. Indeed, African "floating" rice, *Oryza glabberima*, is believed to have been domesticated in the Middle Niger around 1500 BC if not earlier (Portères 1976)(probably in the stressed basins of the northern sectors of the Middle Niger, the Méma or the Azawad north of Timbuktu – see R.McIntosh 1998). Excavations since 1977 through the 1,600 year occupation sequence at Jenne-jeno, the first ancient *tell* city properly excavated of the hundreds, if not thousands now inventoried, shows not only the expected reliance on a variety of domesticated crops, but a sustained and heavy investment in wild plants.

Linked to the respect by ancient farmers for high species variety was their "decision" to locate towns not within the deepest rice basins, and (extraordinarily) not at the above-inundation margins of this floodplain of extremely variable, often disastrous flood heights, but at mosaics of rice-basins of different soil compositions and bathymetries, of floodplain too high for rice but ideal for décrue cultivation of sorghum, of dunes (for dry farming of millet and a variety of "minority" grains such as fonio), and the range of landscapes traversed seasonally by cattle and mixed small-stock pastoralists.

To the screaming frustration of French Colonial administrators and agronomists attempting to impose intensified, irrigation mono- cropping, the ancient attitudes of resistance to water control persisted into historical times. So often one hears in the Colonial refrain deep disdain for the "primitive" state of indigenous *Oryza glaberrima* cultivation:

> In the mid-twentieth century, as the French colonial government struggled to implement irrigation-based agriculture along the Middle Niger, they lamented the "primitive" state of indigenous floating rice agriculture in the IND [Inland Niger Delta – the "live" basins of the Middle Niger]: weeding was rare, broadcast sowing haphazard and wasteful, transplanting, manuring, and plowing non-existent. Wild rice grew alongside domestic varieties, and in some fields, reseeding occurred entirely from grains that had fallen to the

> ground during harvest. Bemused, the French wondered whether this was really agriculture or simply gathering (Gallais 1967:218-19).

To disdain an indigenous agricultural system as merely "gathering" echoes that all-too pervasive attitude of prehistorians that the kinds of population growth and nucleation associated with the emergence of cities such as Jenne-jeno *could only* have come about because of "considerable subsistence intensification" (Jolly and Plog 1987: 439). The Middle Niger – past and present – confounds these expectations. The Middle Niger is and always has been an environment of great potential, yet profound risk. And I would argue that the ancient peoples of the Middle Niger discovered a novel – and sustainable – strategy of risk management that avoided the intensification of water control or the extreme concentration of labor and inputs upon favored individual plots by finding a way to link niche specialization with low inputs to labor across a diversified portfolio of agricultural (and pastoral) investments. Compare the 380-450 hr/ha labor average for Middle Niger rice farming to the 1000 hr/ha of the small-scale Kofyar of Nigeria (Gallais 1967: 216; Stone 1996: 107, `121). Add to this the purposeful planting, simultaneously, of a great many varieties of domestic Oryza glaberrima (a point taken up below) (Gallais 1967; Viguier 1937), AND the tolerance of wild rice in the same fields. Oka (1988: 117) reports that seed-type diversity of *O. glaberrima* is in fact highest in fields where wild rice comprised 40-50% of the biomass. The persistence of wild grasses, including *Oryza barthii* spp. (local wild varieties of rice) in the archaeological flotation samples from Jenne-jeno so astonished researchers at the Bamako ICRISAT (Institute for Cereal Research in the Semi-Arid Tropics) that they mounted repeated expeditions into the bush to find, much to their astonishment, that contemporary diets boast a significant wild component still (purposefully and not risk-induced). Can't you just hear the exasperation of the Colonial agronomists and of Papa-Commandant?!

Niche Specialization Within a Generalized Regional Economy

Risk Management looked at another way is Ecological Resilience. Ecological resilience is written in the fluid concepts of landscape and ethnicity shared by the mosaic of ethnic and occupation groups of the Middle Niger. Ecological resilience is inscribed also in the very ancient practice of "niche

specialization within a generalized regional economy" that the ethnohistorian and archaeologist can read in the local response to several dimensions of ecological and palaeoclimatic risk endemic to the Middle Niger. In this case, all relies upon an annual strategy of multiple ethnic groups mixing crops in fields of various soil and topographic characteristics and in some degree of exchange reliance upon neighbors specializing in complementary foods (for example, Nono rice farmers with Fulani pastoralists, who would provide meat, milk, and the critical animal waste for fertilizer).

The most immediate risk derives from a highly volatile climate -- with variability along several dimensions that might best be described as "quasi-chaotic". Shukla (1995: 44) provides the classic description of the instrumental record: “In the recorded meteorological data for the past 100 years, there is no other region of the globe of this size for which spatial and seasonal averaged climatic anomalies have shown such persistence.” Sharon Nicholson (1994: 121) despairs: “The largely semi-arid African continent has undergone extreme climatic changes which are probably unmatched in their magnitude and spatial extent.” The Sahel is infamous, in the first instance, for high interannual variability. Year-by-year it is nearly impossible to predict the several characteristics of precipitation: 1) total rainfall; 2) onset of the rainy season; 3) rainfall for each particular month during the short monsoonal wet season, 4) areal patchiness of the rains; and 5) onset of the serious rains after the light drizzles that allow plowing of the heavy floodplain clays. Interannual variability also characterizes the annual flood - 1) height and 2) staying power before evacuation, 3) date of arrival from the highlands of southern West Africa, 4) yearly flooding characteristics of any of the multiple basins that together comprise the Middle Niger, and 5) nature of the seasonal migrations and spawns of its rich fish load. Even variable temperatures over this vast evaporation basin and the deflating NE Trades of the dry months conspire to frustrate the considerable predictive skills of the Middle Niger's specialized farmers, fisherfolk and pastoralists.

The second dimension of variability is mode-shifts: impulsive changes of the central climate tendency, with a threshold beyond a previous normal range of variability to a new set of boundary conditions (Nicholson 1994). In other words, "global" climatic trends may be initiated here by abrupt events or may be accompanied by short, but intense periods of high temporal instability. Modes

punctuated by shifts may be interdecadal or multi-decadal in scale -- such as the Sahel Drought that began in 1968 and (arguably) that continues today as a high oscillation episode. Or modes may last centuries or even a few millennia -- as documented in lake-levels (R.McIntosh 1998: 66-80)

Our last dimension of variability is the landscape itself. The Middle Niger is a tight mosaic of landforms and floodplain soils of descending bathimetric progression. But, because of the dramatic interannual variation in rains and flood, a Nono plot of high-yield African rice one year, may the next be used -- by a separate ethnic group, the Bambara -- for flood recession sorghum, and the following year of minimal flood, it might be visited only by Fulani herds of cattle and small stock. That is, the high variability of altitude, inundation-potential and soil morphology invite a highly fluid concept of landscape. A particular microenvironment might theoretically redirect its seductions among five or six subsistence specialists within a decade -- with inevitable potential for conflict when, for example, a high-dune millet field harvested a month behind "normal" because the rains were late might be trespassed upon by the transhumance cattle herds returning "earlier" than usual from Saharan grazing to their dry-season pasturage in the floodplain.

Critical to the concept of niche specialization is the intensive production of local ecosystem knowledge. In so unpredictable, risk-charged an environment, the historically chosen route to risk minimization is through intergroup exchange (treated in detail below) and through a specialized understanding of the bio-physical aspects of one's own particular niche. What has so struck archaeologists and agronomists about the peoples of the Middle Niger is, *collectively*, their intensive utilization of a broad spectrum of wild, semi-domesticated, and locally domesticated or modified varieties of "biosphere" crops (those twenty or so hyper-domesticated crops, such as rice, sorghum or millet, that feed the majority of the world). Ecosystem knowledge: what varieties will grow on what soils or topographic features, “volunteer”, or with planting, or with just weeding and thinning, under what conditions. Ecosystem knowledge of this genre goes beyond mere appreciation for and preservation of "minority" varieties or food or otherwise utilized plants. The argument can be made that it is exactly this kind of knowledge, millennia ago, that lead to the domestication in the Middle Niger of crops such as

Oryza glabberima (African "red" rice), and perhaps also varieties of sorghum, millet and fonio. Further, one sees in agricultural practices today a form of augmented biodiversity in the practice of Middle Niger farmers of purposefully sowing between 41 and 50 varieties of rice in the same field (Bingen : 30; Gallais 1967: 199). Even wild rice (*Oryza barthii*) is a welcome complement to these pluri-variety harvests. But, as each group becomes more and more specialized over deep time in the knowledge of their own niche, what keep disaster at bay should the rains or floods fail? Neighbors: Neighborly relations are the key!

With over a dozen subsistence-defined ethnic groups in the Middle Niger, some conflicts are inevitable. But why is the floodplain not a morass of bloodshed and homocide? What was the local concept of landscape that positively encouraged ethnic differentiation, elaborate niche specialization, and a shared commitment to a regional, generalized economy? *Not only* are fisherfolk divided ethnically into hand-net, shallow swamp fishermen, deep-channel collective-net fishermen, and the hunters of aquatic fauna such as crocodile, hippos, and giant Nile perch; *Not only* can the fisherfolk absolutely count on the labor of rice farming Nono, Marka and Rimaibe during the season of fish migrations; *But also,* the critical rituals of appeasement of the water spirits that obligatorily begin the deep-swamp fishing calendar of the Bozo are initiated by their Nono farmer neighbors. That is, the production calendars of one group may be "activated" by another – anger thy neighbor and you will surely suffer the rest of the year! Over deep time, there has developed an ethos of resistance to a monopoly *perception* of landscape (such as one would expect to find in a classic despotic state) that encourages both niche specialization and a highly contractual web of surplus and labor exchange obligation -- but not necessarily exchange of marriage partners. If Diversification (broadening the subsistence system) and Exchange (playing off temporal variability against spatial variability) are classic tools of risk-buffering (Halstead and O'Shea 1989: 1-5), the peoples of the Middle Niger have gone beyond mere buffering to create a massive web of mutual aid obligations underlain by four ideologies:

1) Critical Catalyst: The subsistence calendar of group "X" can only be activated by the scheduled ritual intervention of group "Y". To try to short-circuit this tradition simply invites situational and cosmic

disaster.

2) Bonds of Fictive Kinship: Legends of common origin and rules of obligatory common labor (including an elaborate web of joking relations). The template for these myths is an account, perfectly likely fictive, of the sequential colonization of the floodplain, in which ethnic groups contract with a hierarchy of occult guardians of prominent topographic features.

3) Undischargable Debt: Lore of extraordinary sacrifice by one group for another, under conditions of ecological stress, wrapping everyone in a fabric of expectations for future behavior.

4) Equation of Ecological Resilience with Heterarchical Resistance to any form of Centralization or Authority/Resource Monopoly. Heterarchy has become a core concept in prehistorians' attempts to understand alternate paths to cultural complexity. Formerly, all communities beyond a certain (unspecified) demographic threshold or regions integrated with a certain (unspecified) scale of political economy were thought necessarily to be stratified vertically, with a more-or-less despotic central power at the apex of the hierarchy. More and more examples are now known of complex societies, in which different sources of power are complementary and counterpoised among different segments of society, the classic definition of heterarchy (Crumley 1995: 1-5). Locally, it is not considered to be at all remarkable that the 1,500 year archaeological record of urbanism, to date, shows no evidence of state formation, political or social hierarchy, or of elites of any stripe. And this observation leads to our deep-time perspective on the origins of niche specialization.

Deep-Time Perspective

What is impossible, of course, is to know how deep in time run any of these specific rules of ethnic accommodation. However, there is good proxy evidence from ethnohistory and archaeology that corporate identity and niche specialization are ancient institutions. We turn first to the best understood region of the Middle Niger, the vicinity of modern Jenne and its ancestral community, Jenne-jeno, where excavation and survey has gone on for over thirty years. Jenne-jeno is a six-meter high *tell* covering 33 ha, with evidence throughout a continuous sequence lasting from c. 300BC to AD 1400 of specialist

ceramic and metallurgical producers supplying a large hinterland, as well as distant riverine partners such as Timbuktu on the opposite, northern end of the Middle Niger. The Jenne-jeno sequence is a record of increasing numbers of specialist activities (summarized in R. McIntosh 2005: Ch. 4).

But more interesting is what the members of occupation corporations of modern Jenne (a testimony corroborated in many cases by archaeology) say about the scores of satellite *tells* clustered near Jenne-jeno. Within a four-kilometer radius of Jenne, there are 70 such satellites, most if not all occupied simultaneously at least during the first centuries of the present millennium. Take, for example, Kongousa (four kilometers northwest of Jenne). Abandoned by the fifteenth century, it is still claimed as exclusive corporate property by a specialist lineage of Somono boatmen, specialized as deep-channel fishermen involved in long-distance transport along the Niger and its distributaries and iron smelters. Special permission must be obtained from the head of elders in order even to walk over the site. Sure enough, the surface remains recorded by archaeologists are predominantly net-weights, imported items, and smelting furnaces. Only a handful of the satellites have ethnographically attributed corporations, such is the erosion of oral memory over some 600 years. But a complete surface recording of all 70 and preliminary excavations at a dozen satellites would suggest to any prehistorian some degree of corporate exclusivity at different mounds and of specialization in subsistence and craft activities.

Beginning perhaps threethousand years ago, we have an emerging urbanism based upon clustering -- that is, a segmented community of specialists who voluntarily come together to take advantage of the services of others and of a larger market for their products, but who maintain physical separation (at least symbolically) in order to reinforce their separate identities. Clustering -- physical separation with proximity -- facilitated the reciprocal relations with other specialists, a relationship that continues to bind together the Middle Niger ethic mosaic to this day. So, clustering appears to have been a stable solution to the complementary ecological problems of the Middle Niger: 1) a rich environment, but one presenting highly variable rain and flood regimes, and 2) to combat unpredictability (while at the same time enabling increasing scales of demographic interconnectedness, social complexity, and regional integration), many

specialized artisan and subsistence producers must find a means permanently to link together into a generalized economy. The solution was successful: by the time of the first historical records in the fourteenth century, the entire 55,000 km^2 Middle Niger from Timbuktu to Jenne was integrated into a regional economy (S.McIntosh 1995: 360-72) (linked further to the Mediterranean "global" economy by the famous trans-Saharan "Golden Trade of the Moors" – Bovill 1970; Levtzion 1973). Archaeology show that this regional integration extends centuries back into prehistory. Clustering and reciprocal exchange does not substitute, however, within the corporate subsistence practices for other "extensive" strategies: 1) sowing more land (and more heterogeneous plots) than the farmer has labor to harvest (2.5ha/person at 400mm, compared to 1ha/person at 1,000mm) in order to anticipate spatial variations in rainfall or flood; 2) mixing a variety of crops and grain varieties (recall the 41 races of *Oryza glaberrima*) over a variety of micro-environments; and 3) resistance to introduced crops that may be high-yield, but condition-sensitive (such as *Oryza sativa*). This last became a critical element in local farmers' resistance to the "scientific agriculture" purveyed by the Colonial authorities.

Settlement clustering, which serves for archaeologists as one of several proxy measures of niche specialization, is a rural as well as an urban phenomenon. It is widespread over the 55,000km^2 Middle Niger. Just how old are niche specialization and the values of horizontal complexity associated with it? Here we turn to one of the two senescent basins of the Middle Niger (where we will find the Colonial *Office du Niger* of this paper's conclusion), the Méma. Along the dry channels and distributaries of this "dead delta" cluster scores of early iron age communities of the mid-first millennium B.C. (deVries et al. 2005). These are proto-towns of up to 30 components -- built atop late stone age, clustered settlements that, by present evidence, go back into the second millennium. Excavation at these sites is in its infancy; frankly, we do not yet have the same evidence of occupational exclusivity as at the Jenne-jeno Urban Complex. Still, at late stone age sites for which we can make an argument for contemporaneity, evidence suggests that specialist fisherfolk, pastoralists, and perhaps grain gatherers/early horticulturalists were purposefully living in separate hamlets, next to one another, at least seasonally. Pastoralists exchanged surplus meat for fish, and certain ritual items also passed hands. When security issues are resolved, the

Mema will be a prime locale for extensive research.

Whatever the ultimate age of clustering and specialization in the Middle Niger, the values of ecological resilience are arguably of considerable antiquity and even of persistent efficacy in promoting biodiversity. An extremely fluid concept of landscape helped to turn endemic climatic stress into a culture of ethnic accommodation. These values were directly opposed to the Colonial bureaucratic belief in massive capital injection, monocropping of exotic crops, and of homogenization of the landscape and of the peasantry. The Middle Niger remains the granary of West Africa.

An Archaeologist Looks at the *Office du Niger*.

Is there any value, ultimately, to agonizing over the prehistorians' dilemma about origins of food production systems in the Middle Niger? The "pull" over the Kg/Ha/Kcal precipice or the "push" by climate change or demography – does any of it help us to deal on the day-by-day with the exigencies of food and famine in the Sahel? In fact, a deep-time perspective does help us think about a Colonial development project gone bad – with very current implications.

It all went horribly wrong. And it had such vast potential for Colonial pride and for Metropolitan investment. At the southern fringe of the Sahara, deep in the middle of its West African colony of l'Afrique Occidentale Française (now the Republic of Mali), France undertook the most ambitious and most prestigious of all the development schemes of all her colonies: the *Office du Niger* . Through massive technical investment and rational economic centralization, a long-dead palaeochannel of the Sahara was to flow once again and an enormous, but senescent basin of the Niger river's interior delta, the Méma, was to blossom.

This was to be Africa's Green Revolution decades before the Asian miracle.

And, indeed, as archaeologists follow the national route from Niono to Segou, past the *Office du Niger* canals, irrigated fields and barrage system, on their return from their field seasons investigating the now-deserted *tell* cities of the northern Méma wilderness -- the greenness of it all is overwhelming. This

is a deceptive paradise. For this is, in reality, a landscape of vividly remembered human suffering and of imperial ambition run amok. It is also the scene of decades of vast agronomic frustration.

As planned initially in the 1920s, the river barrage and canal system would annually inundate some 1.9 million hectares (Echenberg & Filipovich 1986; Escudier 1985; Herbart 1939; Magasa 1978). Irrigated cotton would be transported to Mediterranean markets along a railroad of 3,270 km. across the world's largest desert. Imperial will would forbid the drift of dunes across the tracks! And monocropped Asian paddy rice (*Oryza sativa*) would eliminate the enormous yearly yield variations of the local floating rice, *Oryza glaberrima* . By the early 1930s, the Colonial authorities began to relocate, by brutal military operations, a projected 3.5 million southern peasants to this wasteland of scattered camel pastoralists -- breaking up, in the process, traditional land-use and land-tenure and substituting coercive sharecropping with no possibility for the farmers to own the paddies they worked.

And the results?-- just the first of West Africa's long heritage of development debacles, particularly during the Sahel Drought (Bingen 1995) All were predicated upon large acreage, monocropping, and capital-intensive earth-modification. At the *Office du Niger*, rather than 1.9 million hectares put into irrigation, today there is <50,000 ha, or 2.6% of projections. Rather than 3.5 million laborers, today there are <37,000, or just 1% of projections. The railway was never even begun.

What went wrong? -- The managers neglected to begin with even basic soil texture and fertility studies and, to be only slightly facetious, they forgot to consult their local prehistorian! Any reasonably-observant archaeologist, and any observant ethnographer with an appreciation for time-depth, might have predicted defeat for the *Office du Niger* at the hands of that very same deep-time, local ethos of ecological resilience discussed here.

Now, the nightmare begins anew (do I give away my feels about the project by using such freighted language?). On November 13 of 2006, the Millennium Challenge Corporation created by the Bush administration (essentially an Executive branch parastatial without Congressional oversight, created as a foil to USAID) made the following announcement (Millennium Challenge Corp. 2006):

> **Alatona Irrigation Project ($234.6 million)**
> The Alatona irrigation project is focused on increasing production and productivity,

> improving land tenure security, modernizing irrigation production systems and mitigating the uncertainty from subsistence rain-fed agriculture, thereby increasing farmers' incomes. It seeks to develop 16,000 hectares of newly-irrigated lands, representing an almost 20% increase of "drought-proof" agriculture in the *Office du Niger* area. The Alatona irrigation project will introduce innovative agricultural, land tenure, credit and water management practices, as well as policy and organizational reforms aimed at realizing the *Office du Niger's* potenial to serve as an engine of rural growth in Mali.

My heart would have sunk at reading this, EXCEPT that my attention had been drawn to it in the first place by Jon Anderson, a USAID long-timer in Mali, just appointed as the MMC Resident Country Director for Mali. Jon, in fact, had been the very first person to call me when my 2005 book appeared to comment favorably on the thesis of "niche specialization within a generalized regional economy" and the critique implied of the older philosophy of the *Office du Niger*.

I try to remain the optimist.

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