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**Directions for Change in H.E. in The Mekong Region: Pasts-
Thinking to Futures-Thinking, and City Universities to Village
Colleges**

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ABSTRACT

Written by a retired university and college engineering teacher, who (at 73) is now Khon Kaen University's oldest student, doing a PhD study of Sustainable Development's Curriculum Effects, the paper is directed primarily to young members of faculty who are looking forward to their careers in universities as those universities will be in the future.

The paper provides a challenge to universities in response to geopolitical change. While at first glance the scenario of global resource depletion and impact on the local Mekong Basin community presents a depressing picture, the paper provides an optimistic option based on forward thinking led by proactive thinking by educational leaders.

The paper briefly describes the learning that its author derived from studying with the Hawai'i Centre for Futures Studies in 2006 and how, in 2007, that study affected his MA study of forthcoming reverse migration back to North-eastern Thailand in response to geopolitical change. It then looks at how this affects higher education institutions in the Mekong Region.

The paper argues that universities and colleges have inherited a pre-disposition to be reactive to the pasts of their societies, as opposed to pre-actively preparing for the futures of their societies. It points out that higher education institutions need to change their thinking in the 'business planning' part of their development plans now that we are at the 'tipping point', when the industrially-developed nations (or parts of nations) are making the transition from increasing energy availability to decreasing energy availability. It explains the background to the 'tipping point', its geopolitical effects and the consequent national effects of energy depletion. It offers a scenario in which it is feasible that the areas comprising the Chao Phraya and Mekong Basins, led by their higher education sector, may lead the world in successful, peaceful, adaptation to the changed circumstances.

That is a scenario that is more optimistic than most that could be constructed, and examined and found to be feasible. The scenario's feasibility depends on forward-thinking intellectual leadership taking advantage of the particularly advantageous circumstances of the Chao Phraya and Mekong Basins.

Keywords: Mekong Region, sustainable development, energy depletion, universities, migration, cities, villages

INTRODUCTION

The Geo-political Emerging Issue of Present Times

Bland words often mask a revolutionary demand. For institutions of tertiary-level education, the words of the UNESCO Portal say: "Higher education for sustainable development has come to be seen as a process of learning how to make decisions that consider the long-term future of the economy, ecology

and equity of all communities”. Consequently a key task of higher education has become the development of capacities for such futures-oriented thinking in faculty members and in students.

These bland words make a revolutionary demand. Not a demand to revolt, but to revolve our thinking through half-a-revolution and look forward instead of backward.

Traditionally, higher education thinking has been reactive, not proactive. Universities, as ‘communities of scholars’ in past centuries, have concentrated on bringing pasts to their presents (though Malthus (note 1) in his ‘Essay on the Principle of Population’ is a notable example of a member of faculty who did think ahead). Modern universities, seen by economic anthropologists as ‘institutions for the certification, creation and recreation of the middle class’ (note 2) have been reactively responsive to the demands of employees (particularly faculty), employers and governments (and, even, occasionally, students), but these demands have essentially been requests to make changes to reflect developments of recent pasts. The culture of Ancient Greece set a pattern that has endured.

The futures of all individuals, groups, communities, nations and multi-nations are extensions of their pasts. Preparing the young to take part in the continuance or dis-continuance of established trends should therefore be an essential part of the work of a university, as implied in the words of the UNESCO which are quoted above. But as well as established trends (which may be threatened by reversal, or may need to be reversed) there are also emerging issues. In slow-moving times, the young can be left to cope in their career years with emerging issues, as and when they emerge. Malthus pointed to the fact that an issue (hunger) would emerge if two established trends continued. These trends were rooted in the tendency for population to expand exponentially and for food production to expand only linearly. He could not foresee that the mining of coal, and subsequently ores and other fuels, would enable massive expansion of food production and, so, delay for two centuries the emergence of the issue that concerned him.

It is the contention of this paper that the fundamentally-important emerging issue of the early part of the twenty first century CE (the later part of the twenty fifth century BE) is that such big and easily-won discoveries of deposits of exosomatics (fuels and ores from within the body of Earth) are no longer forthcoming. The development of capacity to think ahead to the implications of this is going to bring a big change to the service required of higher-education institutions. And it will have to be done at the same time that the universities and colleges of technology are themselves being changed by the effects of that fundamentally-important emerging issue. At present we have a large part of the sustenance of populations in hyper-urban cities being produced by a small number of mechanized agri-business ‘farmers’ in rural areas. That is not going to be sustainable. That capital-intensive food production, based on petrochemical-derived fertilizer, will contract, and food will not be available to sustain city populations at their present sizes. The past rural-to-urban migration will reverse into urban-to-rural migration (and there are signs that, in Northeastern Thailand, this has already started, as some men who had intended to return to their taxi-driving in Bangkok after visiting their village families for the April 2008 Songkran holiday are reported to have decided, on economic grounds, not to do so). That emerging issue’s second main effect is that the frenetic travelling about by motor bikes, cars, buses and aeroplanes of the recent past is not going to be any longer affordable. Hence the two parts presaged by the title of the paper: the re-orienting of academic thinking from thinking about pasts to thinking about futures-as-extensions-of-pasts, and the re-organisation of city universities into federations of village colleges. When its students can’t come to the university, the university will have to go to the students.

Theoretical Framework

Although the scenario of the Mekong Region countries leading sustainable development emerged, as described later, from a ‘bottom up’ consideration of the future of the villages of Northeastern Thailand, a ‘top down’ theoretical framework of five stages can be constructed. First, historically, industrialization developed after the discovery of easily-available coal deposits and mineral-ore

deposits in Britain. The steam engine, invented by Newcomen and immensely improved by Watt, enabled water to be pumped from mines and, so, huge deposits that lay below the water table could be extracted (the ‘Industrial Revolution’). Secondly, discoveries of oil and natural gas, particularly in America, led to the petrochemical developments, particularly inorganic fertilizers and cheap shipping and transportation. Third, large urban populations could be fed by a small number of highly-capitalised food-producers in rural areas. The attractions of urban life and specialized occupations have resulted in hyper-urban cities, with their intensive usage of energy. The cities are dependent on food inputs that are themselves dependant on the easy availability (‘cheapness’) of natural gas and oil. Fourthly, as that easy-availability ceases, the industrial developments, particularly the cities, gradually cease to be sustainable and only a much-smaller proportion of populations will be able to be supported in cities. Fifth, areas or regions that will find it less difficult to cope with these inevitable changes will be those that still have a substantial rural population practicing the necessary broad range of skills in mixed farming and peasantry. The Mekong Region countries (Thailand, South-West China, Myanmar, Laos, Cambodia and Vietnam) make up one such area.

Pasts-presents-futures

A powerful message emerges if, as in figure 1, we plot the availability of exosomatic (‘taken from within the Earth’) fuels and feedstocks over 4000 years, spanning approximately 120 generations.

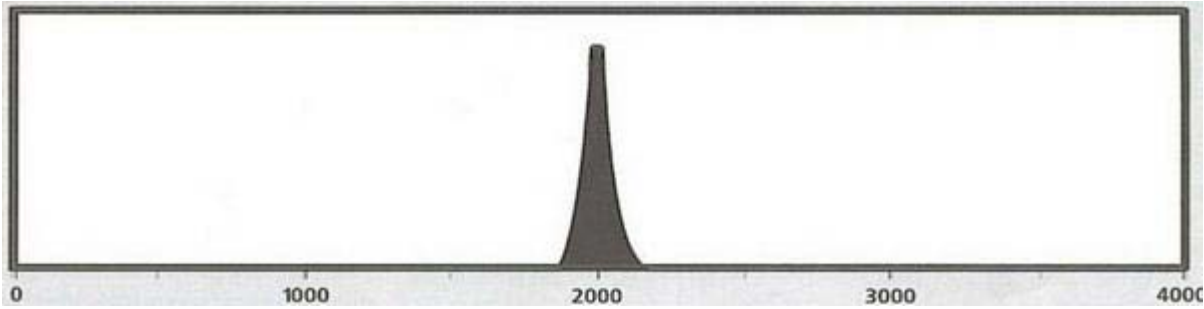


Figure 1: The usage of exosomatic fuel from 0AD (543 BE) to 4000AD (4543BE)

Alternative captions for Figure 1 could be “The Extraction of the Exosomatics”, or “The Removal of the Earth’s Accessible Stores”.

In Figure 1, the baseline is the 4000 years from OAD to 4000AD. That is, the past 2000 years and the next 2000 years to come.

The curve shows, in smoothed and stylized form, the fuels and ores that have been and will be extracted from within Earth. [note 3] The historians of the future may well look back on this industrial period and, by analogy with electronics, describe Figure 1 as “The Exosomatics Pulse”.

Coal was the first major, primary fuel of industrialism. It is still the main primary fuel for the secondary-energy supplies of electricity, though it has been supplemented by oil and natural gas where that has been more convenient. For transportation and shipping, coal has been superseded by oil. However, as depicted in figure 2, coal will outlast oil and gas for use as fuel.

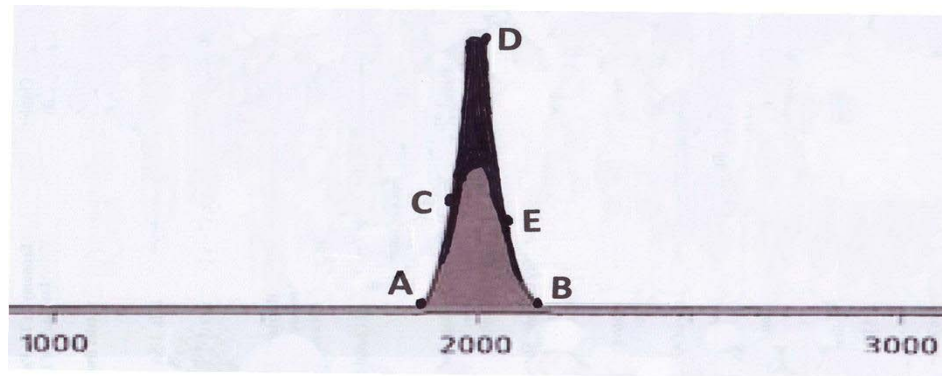


Figure 2: Coal (gray) with oil and gas (black)

The times, in figure 2, before point A can be called “The First Sustainable Age”. The quantities of exosomatics extracted were very, very small. A little coal was mined from shallow pits in China, and small amounts of iron and bronze were smelted (using wood as the fuel) in places such as Ban Chiang. However, the total quantities were infinitesimal when compared to the quantities extracted in the last 200 years in the forms of coal, oil, natural gas, uranium, iron, copper etc. These exosomatics (‘matter from within the body of Earth’) have now been depleted to the point where supplies are becoming harder and harder to win. In whatsoever way we measure ‘price’, they are going to be more and more ‘expensive’ and less and less will be ‘available’.

The period from A to B is the “The Industrial Age”, with wood, coal oil, gas and uranium as fuels. It is usual to concentrate attention on oil as its supply has become so crucial to modern lifestyles in which travelling around has become such a big part. But the consequences of the depletion of the ‘finds’ of natural gas merit even more attention. As so much of the food for the urban masses is produced by modern farming methods that depend on massive inputs of chemical fertilizer, for which the feedstock is natural gas, that reduction in natural gas will cause shortage of food.

Families can survive in their entireties without anybody travelling, but not with anybody without food.

The times after B can be called “The Second Sustainable Age”. Their energy sources can be expected to be wood and hydroelectricity, with possibly some small, intermittent contributions from wind and/or wave and/or solar generation.

In both figure 2 and figure 3, C marks the start of the author’s career.

D marks both the end of the author’s career and the start of the career of today’s young graduate.

E marks the end of the career of today’s young graduate.

Figure 3, in a stylized and smoothed way, illustrates the ‘progress’ of the ‘price’ of exosomatic fuel.

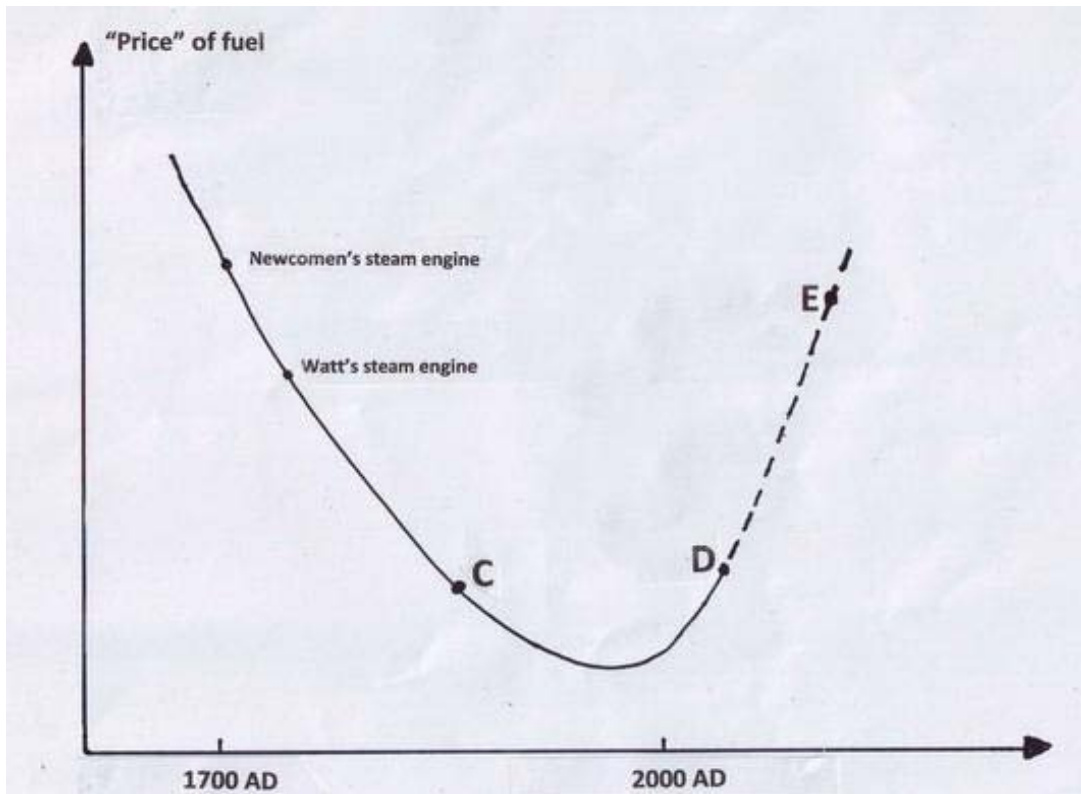


Figure 3: The 'price' of exosomatic fuel

Note that the curve in figure 3 ends, just after E. Coal, oil and gas won't have run out, but the amounts being found will be so low that they will not be used as fuels. They will only be used as feedstocks for high-value and essential commodities such as pharmaceuticals.

Sustainable development is usually defined as "Development which meets the needs of the present without compromising the ability of future generations to meet their own needs" [note 4]. It prompts us to think in terms of more than years or decades, but in generations. It also prompts us to recognize the interdependence of economic, environmental and social development. No proposed development can be called sustainable unless it is economically and environmentally and socio-politically sustainable for both the present generation and for future generations.

This paper is concerned with how the service of universities in the Mekong Region may change to match the needs of the next generation as they study in their times, as those times can be expected to then be. A scenario is presented of the major changes that will occur for the Mekong Region after the 'tipping point' (which is depicted as point D in figure 2). The scenario envisages reductions in the availability of energy making unsustainable, in their present size, hyper-urban cities (such as Bangkok). This will cause urban-to-rural migration. The rural population will find it to be unaffordable to travel to universities in the cities and require that university faculty members help them with their learning whilst they stay and work in their villages and district townships.

THE GENESIS OF THE AUTHOR'S SCENARIO OF 'RENEWED VILLAGES'

The Research Essay

In 2006, the author started an MA-by-research in Social Development at Khon Kaen University [note 5]. The MA thesis was to be a study of how the small proportion of village daughters who intend to retire with their Western husbands to their girlhood villages in Northeastern Thailand may have large effects in their villages that are quite disproportionate to their small numbers. It clearly required that consideration be given to the conditions in the villages **as those villages will then be**. So the author took an on-line 3-credit course, "Introduction to Futures Studies", offered by the University of Hawai'i [note 6]

The first assignment required a 500-word essay describing a scenario of 'What my community will look like in 30 years from now'. The author's essay opened with:

'My community lives in a small, compact village of about 200 houses in rural Northeastern Thailand. Through the lens of a camera it will look much the same as it does now in 2006, or would have done, a century ago, in 1906. But 'seen' from the point of view of the social scientist, it will 'look', demographically, quite different from now, as much as it now looks different from 1906. As a result of economic happenings far away, its demography in 2006 is significantly different from 1906, and will change again before 2036.'

The essay continued by quoting Prince Damrong's description of an Isaan village in 1906 [note 7] and told how the only major difference to be seen in 2006 was that the population of the village was now largely just grandparents and their grandchildren. The parents were away working as economic migrants and sending remittances that enabled the children to receive secondary and tertiary education.

The essay concluded with:

'I predict this "return of the parents" by extrapolation from the state of the world economy, now, in 2006. The bubble is bound to burst.

America cannot finance US\$800,000,000,000 (\$800 billion) trade deficits by borrowing the savings of the Chinese (and some other nationalities) indefinitely.

The dollar will tumble.

In the resulting recession, many Western workers-with-the-hand-and-brain will become unemployed with the collapse in demand.

Since they will start the recession in credit-card and mortgage debt, the recession will become a Depression (psychological, as well as economic).

The tumbling dollar will trip up the euro and the pound.

Hopefully the globalised world's edifices of fiat currency will be only shaken, not stirred to the extent of collapse.

*Thailand will be fortunate, in that, when its factories shut for lack of orders, **the workers can come home to their villages.***

*There is enough land that even **many city families can move to rural areas and re-start the peasantry of their great-grandparents. So self-sufficiency, with some rice for export, can come again.***

And Prince Damrong's words, of 1906, will again describe my community, in 2036.

But it will then be a village of educated peasantry, conscious of its need to maintain its sustainability.

*And it will provide **a blueprint for others to emulate, on the international scene.**'*

The Research Thesis

The part of the MA thesis that examined the likely future conditions in the villages then became a search for supportive and/or negative evidence that had bearing on that scenario that had been described in the essay for Hawai'i. This required wide reading, particularly of the sources listed in the Bibliography attached to this paper.

The conclusion of the thesis says: "A scenario was postulated that the proportions of the Thailand economy, which consists of the foodstuffs production in the rural agrarian villages and the manufacture and consumerism of the urban areas, will change over the next one, two, and three decades, as consumerism becomes less and less sustainable. The scenario concluded that the villages will experience inward migration from the urban areas and that the village daughters who return from the West will add to that. The study then examined the feasibility of that scenario. As no contradictory evidence was found and considerable supporting evidence was offered, it appears that the scenario is a feasible one."

THE BIG, CHANGING PICTURE

Thailand and the other Mekong Region countries are fortunate that they can provide shelter, food, pleasure, and some mobility to their populations in the present industrial/agricultural age, in the coming transitional period, and in the later post-industrial age when exosomatic energy will no longer be available. For instance, in Thailand as it is, at present, it appears that about 60% of workers and peasant-farmers are engaged in agriculture, 30% in manufacturing and service activity, and 10% in tourism. That can, with reverse migration, undergo the change to 90%, 8%, 2% quite easily, provided that proper preparations are made early enough.

Manufacturing might hold up to slightly more than 8%, as the surplus rice of the peasantry may enable them to afford to buy more manufactured goods.

2% employed in tourism may be an over-estimate for the times when the ability to fly in tourists has ceased to exist. However these caveats make little difference to the percentage that will be engaged in agriculture. That figure will lie in the range 75% to 90%.

The villages can become 50% bigger without excessive economic, environmental, or socio-political strain, provided that what is happening, and why, is generally understood by all people in all the walks of life, and that those in a position to take advantage of the circumstances to exploit their fellow citizens forgo, or are forced to forgo, their opportunity.

Thailand and the other Mekong Region countries have not gone so far, or for so long, into consumerist-industrialisation that they cannot go forward from it in good order. Countries that are deeper into consumerist-industrialisation and have been there longer (for more than two generations) will have a much more painful transition. [note 8]

Having ascertained the conditions at time B, and knowing the conditions at time D, the social scientist can examine any sustainable (i.e. economically, environmentally, and socio-politically acceptable) 'system' for feasibility. What 'system', or economic and social development structure, is adopted out of those which are feasible will then be decided by the workings of the political structure.

But the transition from D to B will take place. All that the workings of the political structure can change is how well, or otherwise, the transition is managed.

Different countries and nations, and different areas within countries and different groups within nations, are going to have different experiences as they pass through the Second Transition or the Industrial and Global Devolution. (Hence the plural adjective in the term 'Futures Studies'.) But they will have one thing in common: some lesser or greater amounts of the devolution of power (economic and political) from their urban industrial areas to their rural food-producing areas. A major facet of this big, changing picture is therefore the dispersal of the 'middle class' from its present heavy concentration in cities to a more even spread throughout countries. However, with the internet, the members of its various 'communities of practice' will be more closely in touch than ever before.

Professional Skills for Sustainability

The author first experienced the later part of the 'leading edge' of the exosomatics pulse, and the phenomenon of rapidly-increasing industrialization. Then he experienced the 'flat top' of the pulse.

Now he sees young engineers and other young professionals having the different, but equally exciting, prospects of the rapid changes associated with the 'trailing edge' of the pulse, followed by the slowing changes leading towards the final 'steady state'. Since 50% of today's young people can be expected to live to 100 years of age [note 9], many may also experience the first decades of that 'steady state'.

The steady state after the pulse will be very different from the steady state before the pulse. The First Sustainable Age was a static one, with very small and compact towns and cities in which everything had to be within walking distance, populated by people with little information. The towns and cities of the Second Sustainable Age are likely to be linear areas of low-level buildings, maintained from today, lying within cycling distance of an electrified railway. The rich villages are likely to be those on fertile lowlands (who will have surplus food to trade for luxuries) and those in the hills who have energy from a micro- or mini- hydroelectric system on which they have been able to base a small-scale industry, producing high value products. The rich cities will be those that host essential services, in return for which services the food-producing populace will feed them. The city communities will need to have been successful in demolishing unsustainable high-rise buildings and re-using the recovered materials.

Villages, towns, and cities will need engineers and other professionals with the character and expertise to be proactive in being prepared to improvise to keep systems operating for longer and longer, rather than just specifying, purchasing, commissioning and maintaining new systems and equipments. The professional skills that will be marketable will be very different from the ones that are marketable today.

The Chao Phraya and Mekong Basins in the GMS (Greater Mekong Sub-region)

This paper postulates that there are areas which enjoy favourable circumstances that can (though not necessarily will) enable them to adjust and transform to their versions of the era of the Informed Peasantry more quickly and less traumatically than areas and groups that have been industrialised, or partially industrialised, for longer. One such area is the North and Central parts of Thailand that comprise the area drained by the tributaries to the Chao Phraya river, and Northeastern Thailand (Isaan) with the parts of Vietnam, Cambodia, Laos, and South Western China that comprise the Mekong Basin. The total population of this rural area is of the order of 90 million at present.

Although some parts grow different crops from other parts, the common and crucial features of these basins are their high proportions of self-sufficiency in household, village, and regional terms and their freedom from the pressures of excess population. They can absorb substantial urban-to-rural migrancy as the urban areas reduce in population in response to the reduction of the ability of urban areas to be fed by trucked-in food from their hinterlands.

The Magnitude of Rural-to-urban Migration

Drawing on the facts and figures given in a case study of Bangkok (note 10), an estimate can be made, for Thailand, of the permanent rural-to-urban migration that has occurred and the temporary migration flows that still occur. Of Thailand's 60 million population, approximately 20 million are registered as living in the urban areas and 40 million in the rural areas. Yet, since 1990, the net increase in rural population has only been 0.3 million, whilst the net urban population has increased by 15 million. It appears that, out of about 13 million of working age who are registered as living in rural areas, some 5 million (3 million men and 2 million women) are away from their villages at any one time and working in the industrial areas of the Eastern Seaboard or Bangkok. Thailand's 70,000 villages have an average population of 600 people, and on average, in the average village, 70 of the 200 who are of working age will be absent, earning wages in industrial factories or commerce and sending remittances to their parents and siblings.

The Problem of the Size of Bangkok

There is one area that differs significantly from the other areas of the two river basins and that is the hyperurban, primate city of Bangkok. As it is, with its infinitesimal sufficiency, Bangkok would become increasingly unsustainable through the 'declining oil' initial period of the Second Transition.

But it is possible to be optimistic about a Bangkok of the future being environmentally and socially much improved. At present it is a lovable city, and could become twice as lovable by halving its population over the next twenty years. It only requires an average reduction of between 3% and 4% per annum for a population to halve over twenty years and halve again over the next twenty years. If, each year, the returnees after Songkran were that little bit less in numbers than the exodus before Songkran, the reduction could happen smoothly. Figure 4 shows this reduction, starting from the present 10 million (7 million registered residents, and 3 million temporary migrants). There are signs that this started in 2008, though there are, of course, no statistics or survey-reports, as yet.

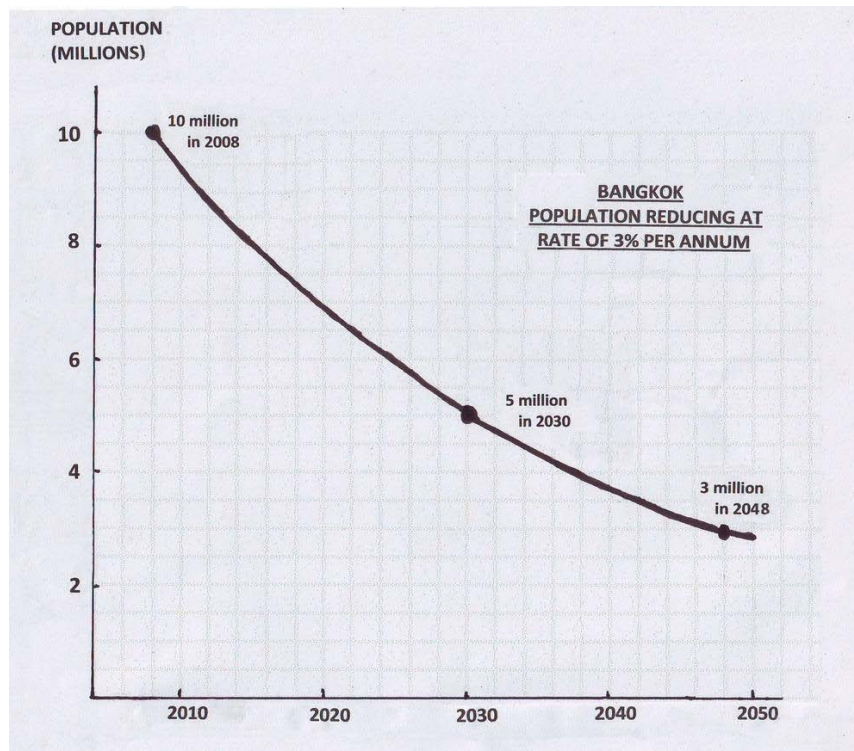


Figure 4: Bangkok's population reducing at 3% per annum.

To give it adequate sufficiency all that is required will be for the new, smaller population of Bangkok (maintaining the seat of government and the port that exports the surplus rice and imports the luxuries) to grow a proportion of their food in their spare time from their official duties. As Golf Clubs morph into Allotment Associations, so will Bangkok increase its sufficiency. Perhaps some players are already practicing digging up the fairways to grow vegetables, judging by their divots.

Jesting apart, though, such a transition to part-time peasantry by city dwellers is not unknown. The recent example (recent enough to have been experienced by the author in his boyhood) was the Dig for Victory campaign in Britain's cities when their incoming supplies of food were reduced by increasing enemy submarine-warship activity in World War II. In the coming War on Want, though, the impetus will be reduction of submarine-mining activity (and subterranean-mining activity), through depletion of reserves.

For Bangkok to reduce its population by, say, 75% over 40 years is going to require far less change, though, than that needed for American suburbs to change to a regime of sustainable sufficiency. Hence the author of this paper can be more relaxed than James Kunstler. [note 11]

IMPLICATIONS FOR PROVINCIAL UNIVERSITIES AND FACULTY MEMBERS

Provincial universities, like their capital-city brethren, have functioned with the 'business model' that they took in young, able people from rural and urban areas and trained and 'certificated' them for progression to specialized professional roles in industrialised, urbanised societies. In particular, the universities had in their libraries material for study that was unavailable elsewhere. They have evolved curricula, and their faculty members have developed specialized expertise, that reflects those 'career destinations' of their students. The provincial universities have been instruments of rural-to-urban migration, in which young people from rural areas largely 'left their parents' indigenous knowledge behind them' as they acquired the appropriate employment and social skills for their urban futures.

However, in a scenario in which decreasing availability of exosomatic energy is causing contraction of industrialism and urban-employment opportunities, the provincial universities will have to change to a different ‘business model’. The ‘career destinations’ of the majority of their graduates will be the villages and district townships of the rural areas, where the graduates will have wider and less-specialised roles. The curriculum needs of the students, particularly those from the urban areas who are in the process of migration to rural occupations, will be quite different from anything hitherto provided by universities.

To rise to the occasion, when the students need something different from what we are used to doing, is challenging. Nevertheless, the need of the times will be to help the next generation of young professionals to develop the courage, confidence, and competence to deal with the wide range of tasks that may come their way in public or private practice in rural and municipal areas.

Young university teachers need to move towards the multi-disciplinary and trans-disciplinary in their research activities so that they become prepared to meet the requirements of their jobs in the future.

At the same time, the universities will have to adapt to the decreased ability of their students to afford residence at the university or to afford daily travel to its city location. Fortunately, information technology allows for transmission to the homes or workplaces of the students all of the material for study, and for students to return the results of their work on the study materials. Communications systems require relatively little energy for their operation and can be expected to benefit from innovation and permit greater interaction between students and their classmates with their teachers by video mail and video conference.

Some attendance at the university campus will still be required, though. The social role of the university in the development of young people does require their face-to-face interaction, and so does the acquisition of the skills of presentation to a live audience. With adaptation, the methods of the Open Universities, with their home-based study plus attendance at Summer School, may come to be followed. But there may also be echoes of the former Day-Release and Block-Release study provisions for student apprentices in the way that universities respond to the more frugal times in which their students will be living.

It is possible to envisage Universities that are ‘federations of village colleges’, employing a relatively low number on their present city campuses and with most of their academic staff resident in the villages, where each acts as the mentor and facilitator to students on a wider range of courses than present-day specialist academics are concentrated on. A medium-sized village might have three university staff members, dealing respectively with Technology, Sciences, Humanities and Commerce. These village tutors with the demands of such wide remits would be senior members of their University’s Faculty. They would maintain close liaison with their Faculty contacts, at other villages and at the central campus by communications much developed from those of today. Bigger villages might have more than three tutors in residence, and in smaller villages the academic staff might have dual appointments to the university and to the village secondary school.

Pre-active Preparation

Preparation for any activity starts with thought that proceeds to the imagining of scenarios of how the activity may develop. Preparing populations for the changes that are to come in their economies and societies must precede such restructuring, and that must start with getting all the individual members of the population thinking ahead. The popular entertainment media need to be enlisted to provide ‘info-tainment’ and ‘edu-tainment’ in the form of ‘social-science fiction’ popular programmes that show the changes of the near-future being coped with. But the authoritarian agencies, particularly the schools, technical colleges, and universities, must be enlisted, too.

Preparing students and consumers for what is expected to be their future has always underpinned curriculum development and marketing. But it has been a primarily subconscious process in the past. That is, industries and education have been reactive to the changing circumstances brought on by the easy discoveries of more exosomatics. Now it is conscious pre-action that is required.

On the industrial front, there has been a false start in the Drive on Ethanol programme, primarily because the scenario was not thought through sufficiently thoroughly. That is hardly surprising, given that the political decision-makers and their technocratic advisers are the products of the reactive former times of increasingly-available resources. They subconsciously followed the established trend of “Get Growth”, without realising that it had been overtaken by the emerging issue of “We must manage with less”. But now that we see that ‘GDP’ is better described by the acronym of ‘Grossly Delusional Parameter’, perhaps we can get on better paths.

The educational systems that have channeled the brightest and best from the rural areas to the urban areas and so robbed the villages of their ‘middle class’ have outlived their usefulness and need to prepare to turn around. That is no small order. It is hard for academics to teach anything other than what they were taught themselves; but the academic’s duty is to help students to prepare for what will be their lot. When it is clear that that is no longer the same thing as their teacher’s past, then the member of the teaching profession must change accordingly---or fail in his/her professional duty.

SUMMARY AND CONCLUSION

The need for economic sustainable development can be expected to cause a change from the intensely-specialized activities of the immediate past. In some ways the appropriate technologies and innovative methodologies of the frugal and thrifty previous times (up to about 1960) will become relevant again, but in a new scenario. Nothing is going to be uninvented, and all the skills that need to be applied in order to eat and be sheltered adequately are still being practised in rural areas, and this indigenous knowledge can be studied and passed on.

The role of the professionals will be that of informed professionals in informed societies, helping their societies to move forward through the transition from the age of industrialized consumerism to the Second Sustainable Age. World-wide, members of faculties in the universities, using modern information technology and innovation in their course and curriculum development, are the ‘front line troops’ upon whom the success of the campaign to achieve sustainable development depends. But who will lead the world’s front-line troops? Feasibly, it may be the universities and colleges of the Chao Phraya and Mekong Basins, if their staffs have the confidence and courage to think ahead, prepare themselves and act pre-actively.

NOTES

1. The eminent political economist, Professor Thomas Robert Malthus published six editions of his ‘Essay on the Principle of Population’ between 1798 and 1826.
2. This, possibly somewhat provocative, description of universities is to be found in “Chayanov and Theory in Economic Anthropology” by E. Paul Durrenberger and Nicola Tannenbaum, Chapter 7 of Theory in Economic Anthropology, edited by Jean Ensminger, 2002, AltaMira Press, Maryland, USA.
3. The ordinate axis of Figure 1 has, deliberately, no scale. Figure 1 is the graphical presentation of a concept, not of a table of figures. If the concept is used to plot any particular quantity, the pulse can be expected to be narrower or broader, shifted left or right by a few years and made irregular by fluctuations in demand for the commodity, caused by economic conditions due to wars or recessions. However, the plot for any exosomatic quantity will not look substantially different from Figure 1.

4. This is the original definition proposed in the United Nations' World Commission on Environment and Development (WECD) report in 1987 that was entitled 'Our Common Future', but is usually known as 'The Brundtland Report'. The full report can be downloaded from <http://www.worldinbalance.net>
5. This research is reported in Allinson M. V. 2007(1) The Return of the Village Daughters. Unpublished MA thesis, Khon Kaen University, and in Allinson Martin Vernon 2007(2). The Return of Village Daughters from the West. *Journal of Mekong Societies*, KKU, Vol 3, No 3, September 2007.
6. This on-line course, numbered POLSC171 is available for study, either for credit, or not-for-credit. See: www.futures.hawaii.edu/syllabi/171Fall03.pdf. The author's experience was reported in a paper: 'Stage 1 for an apprentice futurist: A retiree, undergraduate, on-line, triple-cross-cultural learning experience', at the Conference: "A Legacy of Learning: Sharing global experiences in later life", University of Strathclyde 7-11 May 2007. Available at: <http://www.cll.strath.ac.uk/legacy/index.htm>
7. A translation of this part of Prince Damrong's report is to be found in the book "The Thai Village Economy in the Past", by Professor Chatthip Nartsupha, translated from the original Thai edition of 1984 and with an extensive Afterword by Chris Baker and Pasuk Phongpaichit, 1999, Silkworm, Chiang Mai.
8. There are many websites that discuss how Western nations may, or may not, cope with the transition. A good starting point is www.lifeaftertheoilcrash.net Some of the contributions are tendentious and allowance must be made for hyperbole. Nevertheless, the website does provide food for thought.
9. A recent extrapolation of life-survival rates and calculation of the corresponding age-of-death expectations was found in an article "Half of 30 year olds to live to 100--research" at <http://www.ifaonline.co.uk/public>, accessed 10 July 2006.
10. This case study was found at www.water.tkk.fi/wr/tutkimus/glob/publications/Haapala/pdf-files/CASE%20STUDY%20OF%20BANGKOK.pdf, accessed 07 October 2008.
11. A summary article of Kunstler's book "The Long Emergency" can be found at: http://www.rollingstone.com/news/story/7203633/the_long_emergency

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