

# StockAnalysis

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Soapbox Special Edition

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## This Week

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Part 3: 8 April 2009

## StockAnalysis Soapbox

What is an appropriate or sustainable level of population?

Page 6

## Soapbox Part 1

StockAnalysis wonders why, as a nation and as individuals, we seldom stop to ask ourselves what is an appropriate or sustainable level of population for our region, State, Nation or the whole planet. Despite taking control of so many aspects of our lives, this part of our existence seems to be governed purely by biology.

The idea that a growing population is somehow desirable, harks back to the days, perhaps 5 million years ago, when life on earth for the hairless apes, which had migrated to African savannas during an Ice Age, was somewhat more tenuous than it is today for modern man. As recently as the 17th Century, life expectancy was short and mostly brutish. The advent of modern medicine, along with vast improvements in agricultural output has meant that many of us are not toppled over by relatively minor physical ailments and no longer face the threat of starving to death.

In a lecture titled "Arithmetic, Population and Energy", Emeritus Professor of Physics at the University of Colorado in Boulder USA, Albert Bartlett, put it this way:

*"Can you think of any problem on any scale, from microscopic to global, whose long-term solution is in any demonstrable way aided, assisted or advanced by having larger populations at the local level, the state level, the national level, or globally?"*

This month, StockAnalysis joins others around the planet seeking to raise consciousness of the perils that, in my judgement, await us all unless we act now to control our numbers. The current global financial crisis (GFC) provides us with thinking space which could lead to an opportunity for mankind to reconfigure the way we live before it is too late. Evidence is overwhelming, that our rich green planet is now straining to meet the demands being put on its natural systems by its most successful and destructive life-form.

While the statistics are alarming, it may be difficult for those of us fortunate enough to be Australians to truly be aware of the misfortune which will surely befall us this century if we do not act immediately. Modern man is thought to have migrated out of Africa about 80,000 years ago as an Ice Age retreated. By the time the great pyramids of Egypt were built 7,000 years ago, there may have been 5 million of us and population pressure had already turned the more successful groupings along the Nile and around the Tigris & Euphrates Rivers, from hunter gatherers into farmers. By 2,000 years ago, global population is thought to have been 200 million and it wasn't until the beginning of the industrial revolution in 1750, that total numbers rose to about 800 million people. Just under 200 years later, in 1945 we had almost tripled to 2 billion and in a further 64 years, we had tripled our numbers again to 6 billion. Today, the annual net gain in global population is about 85 million, or 230,000 per day. In the time it takes you to read this brief, about 4,000 hungry new mouths will have joined the planet's 6.8 billion, as it marches through time and space.

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### Indices & Prices

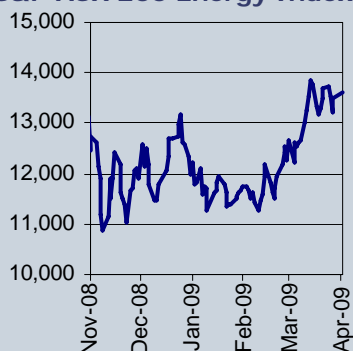
All Ordinaries	3,697.90
Energy Index	13,610.60
Brent AU\$/bbl	70.71
AUS\$/US\$	0.7265

As at Close April 14th

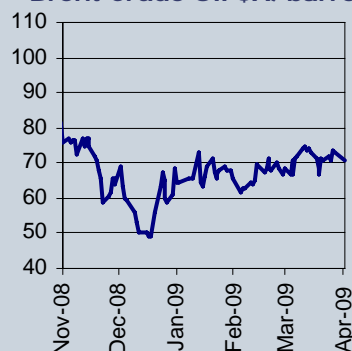
All Ordinaries



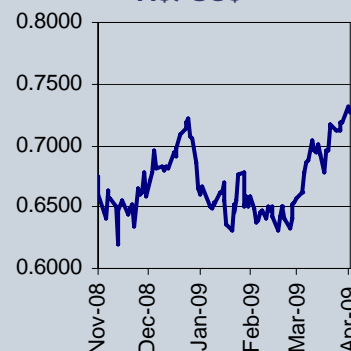
S&P ASX 200 Energy Index



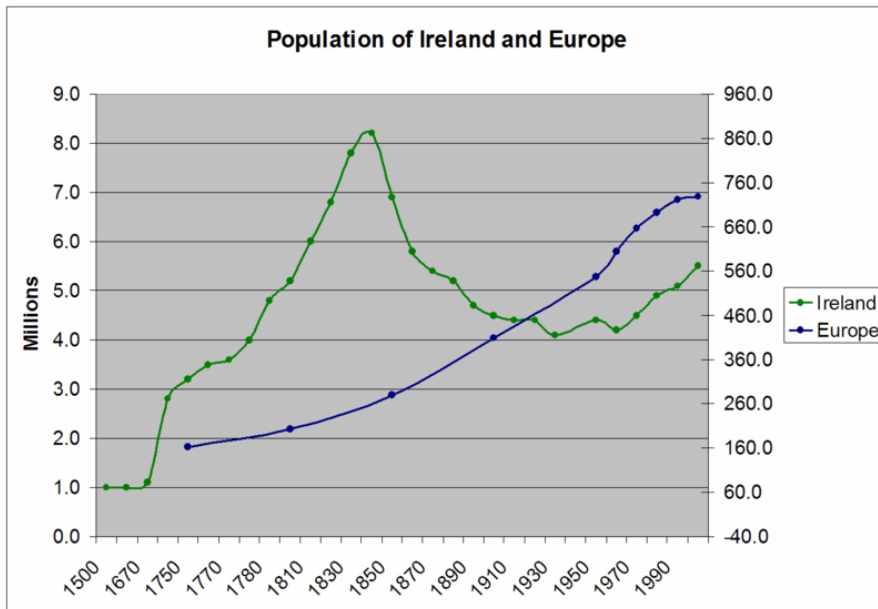
Brent Crude Oil \$A/barrel



A\$/US\$



Humans have been very successful, but like any other life form, our numbers expand and contract to meet the maximum carrying capacity of the land, overshooting and then retreating as was seen in Ireland during the 18th and 19th Centuries, when population rose strongly under the influence of land clearing and improved farming techniques, including the introduction of potato crops only to fall away and halve in numbers during the second half of the 19th Century as blight reduced crop yields.



The Irish disaster places us in front of our relationship with the land, which is the source of our existence. We can't miss the analogy of the Irish potato, wonder of the agricultural technology of that time, with our "green revolution" and our "genetically modified crops". Wonders of agricultural technology, too, but how fragile? The green revolution and genetic crops are all based on the availability of cheap fertilizers and pesticides. And both need topsoil that, with deforestation, is disappearing worldwide at rates perhaps faster than the Irish topsoil of two hundred years ago.

Many of the big issues now facing humankind, including pollution of the natural environment that sustains us, famine, social unrest and religious intolerance, as well as the decline of fishing stocks, and conflict over scarce resources such as oil and water, can all be linked in some way to population pressure. Think about pollution of the air we breath and the water that we drink, the growing number of us (fortunately, not in this country) who do not have enough to eat and whose daily lives are a pattern of misery, filled with hunger, fear and despair.

Don't take my word for it; listen to this voice from China:

*"A senior family planning official in China has warned that a child is born with physical defects every 30 seconds due to the country's high levels of environmental pollution. Jiang Fan, a top official in China's National Population and Family Planning Commission, says the rate of birth defects is alarming and is caused by environmental pollution."*

Many Australians are now reaching the same conclusions as StockAnalysis. Speaking to Andrew Denton (Enough Rope, ABC TV, 2008) former Australian Prime Minister, Bob Hawke said:

*"Population is exploding. We've got to do something about getting a sustainable population level and of course this gets back to poverty, it gets back to the education of women and so on. We've got the problems of food supply, of global warming, massive increases in the population. Now these are not the figments of Bob Hawke's imagination. These are facts. You've got over a billion people in the world of over six billion now living in absolute poverty and half the world's population living in very meagre situations."*

In April 2003, Clive Hamilton, author and former Executive Director of privately funded think-tank, The Australia Institute said:

*"Arguments for a larger Australian population are uniformly based on a belief that it will increase the growth of the economy. Whatever the merits of the argument (and there are few), the population boosters never ask the most fundamental question: Will a higher rate of economic growth actually make us any happier? Why do we equate national progress with economic growth when we know that continued expansion of our levels of consumption is putting ever-greater pressures on the natural environment? It's time to get over our growth fetish."*

(Continued on page 3)

After a period of exceptional growth in food supply during the 1970s and 1980s, global stocks of grain have now been in decline throughout this decade. According to agricultural analysts, by early next year grain in storage around the world may amount to no more than 250 million tonnes, enough to last 54 days, compared with 100 days of inventories which was a more common buffer during the 1970s. High prices for fertiliser, along with the impacts of the global financial crisis (GFC) and regional weather impacts are likely to see stocks of grain fall further in 2009/10.

In 2006, Canada's President of the National Farmer's Union said:

*"Thirty years ago, the oceans were teeming with fish, but today more people rely on farmers to produce their food than ever before. In five of the last six years, global population ate significantly more grains than farmers produced."*

Voicing concern, in his series The Life of Mammals, Sir David Attenborough says:

*"... Mankind is looking for food not just on this planet but on others. Perhaps the time has now come to put that process into reverse. Instead of controlling the environment for the benefit of the population, maybe we should control the population to ensure the survival of our environment."*

Last year, *The Economist* magazine wrote:

*"Some of the worrying changes may not be entirely the work of man. But one that surely has no other cause is the dearth of fish in the sea: most of the big ones have now been hauled out and the rest will be gone within decades if the pillage continues at current rates."*

*Indeed, over three-quarters of all marine fish species are below, or on the brink of falling below, sustainable levels. 90% of large predatory fish (the big ones such as tuna, swordfish and sharks) have gone, according to some scientists. In estuaries and coastal waters, 85% of the large whales have disappeared, and nearly 60% of the small ones. Many of the smaller fish are also in decline. The killing of turtles in the Caribbean (99% down) started in the 1700s. The hunting of sharks in the Gulf of Mexico (45-99%, depending on the variety) got going only in the 1950s. Another change is the appearance of a mass of discarded plastic that swirls round in two clots in the Pacific, each as large as the United States."*

Next week I will explore some potential solutions to the problem and look at the consequences of failure, but in closing, a voice of hope from Dr Martin Luther King Jnr:

*"Unlike plagues of the dark ages or contemporary diseases (which) we do not yet understand, the modern plague of overpopulation is soluble by means we have discovered and with resources we possess."*

*What is lacking is not sufficient knowledge of the solution, but universal consciousness of the gravity of the problem and the education of the billions who are its victims."*

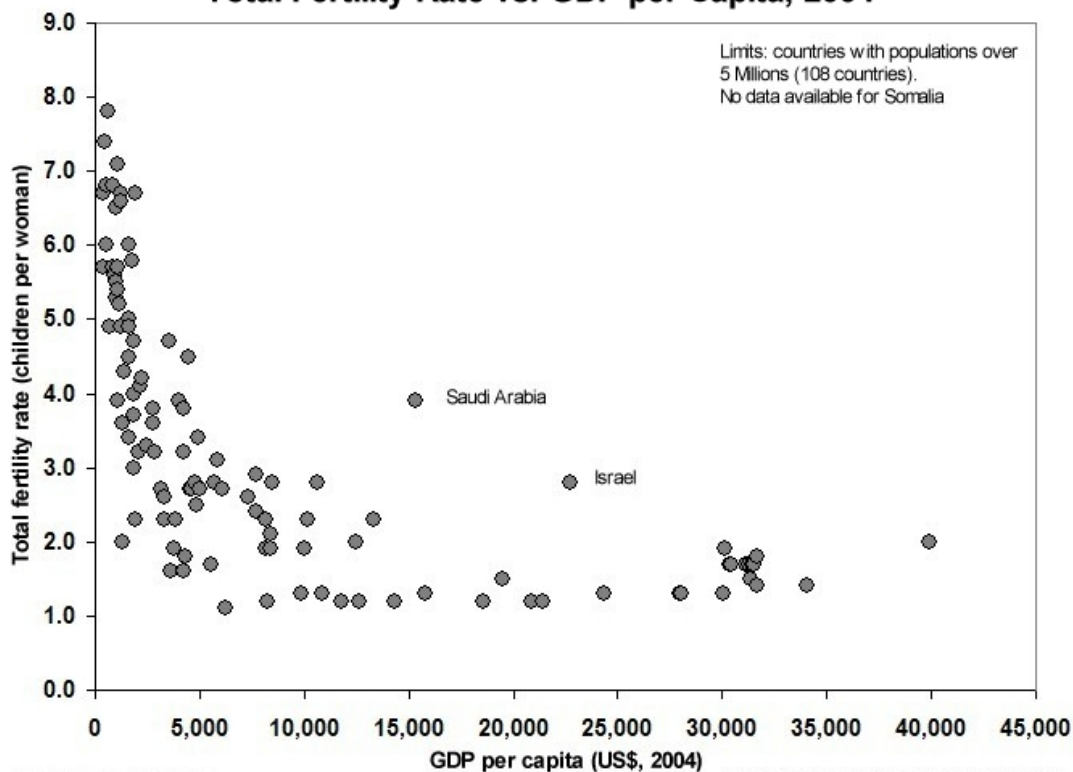
## Soapbox Part 2

In a previous edition of StockAnalysis, I explored some of the issues we face as global population continues to grow exponentially. The thrust of that discussion was that it is time we began to think past our children and grandchildren to the time of our grandchildren's grandchildren. There are those that say we should not worry, pointing to a predicted levelling off in population growth, which might see human population levels stabilise before 2100 at around 12-15 billion, compared with a little under 6.8 billion presently, but StockAnalysis is not so sanguine. The problem with an approach of waiting for technology to save us is that it may not, and even if it does, the world will end up with an unsupportable 12 billion people before its population stabilises. If all 12 billion want to live a modest Australian lifestyle, we would need 6 planet Earths to provide all the metals and food to support that many people at this standard of living, not to mention increased levels of pollution and degradation of the environment which would result from trying to sustain that many of us.

The optimists believe that technology will save us, as it has in the past. New foods, new energy sources, new housing standards, space travel and many other new inventions that have not even been imagined will certainly play a part in our future wellbeing. But issues of sustainability and quality of life must be considered in the light of evidence before us of massive degradation of our natural environment. The technology fix draws me to think of movies such as "Wall-E" and "Soylent Green", which depict possible outcomes where population pressure becomes too much.

Fertility rates (TFR), defined as the number of live births per woman, between the ages of 15 and 49 years, are plotted below. Generally, a TFR of 2.1 is seen as being replacement levels for a community.

**Total Fertility Rate vs. GDP per Capita, 2004**



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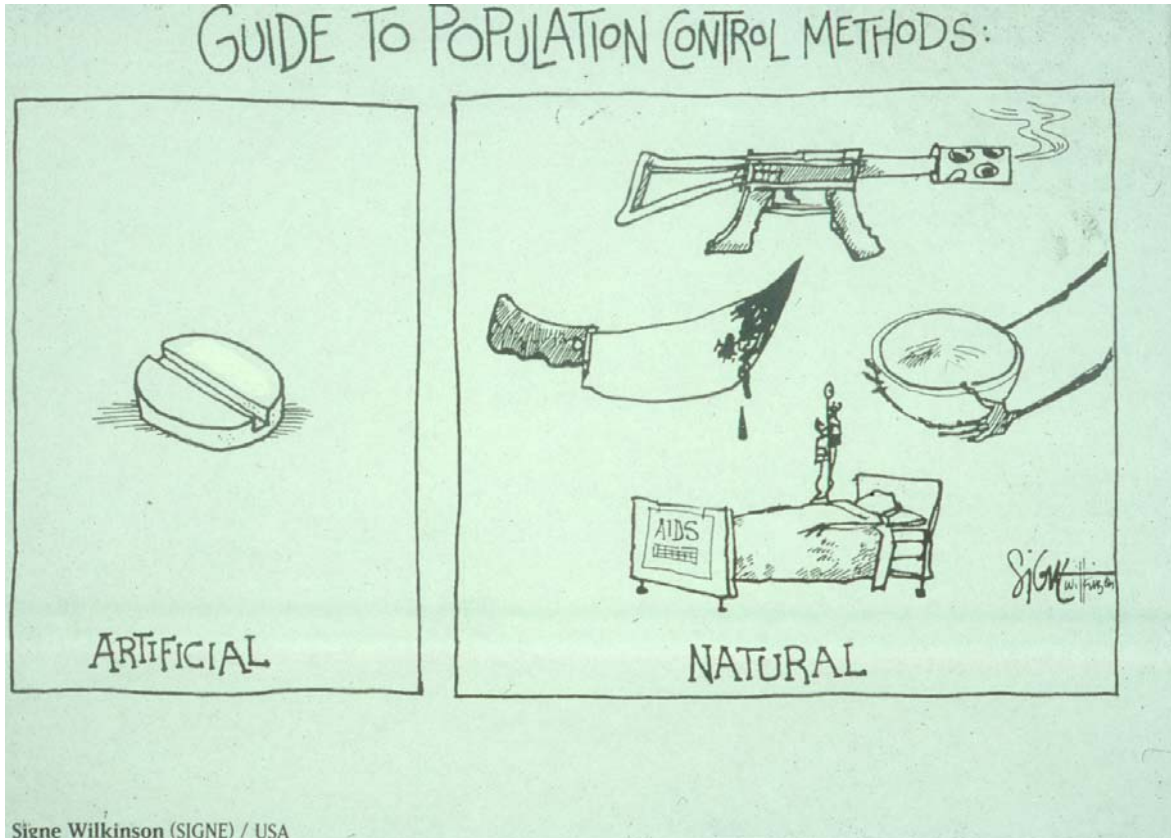
Source: CIA world fact book ([www.cia.gov](http://www.cia.gov))

The data alongside from the US, CIA's world fact book, clearly illustrates that poor people with little access to education have larger families, while rising wealth and better education leads to lower family sizes. Some countries with TFR's of less than 2, such as Vietnam and Thailand, still have rising populations because their demographic profile is very flat. They have large numbers of young people. In these cases, the number of new births far outweighs the number of deaths, since there are an overwhelming number of women of child bearing age and a relatively smaller number of older people.

Today, natural methods of population control include disease and famine, which are often promulgated and prolonged by political elites as well as wars, often waged in the name of one brand of religion or another, but more often than not, the underlying reason for wars has become access to raw materials and food. I heard a wonderful quote by Leonard Cohen at his recent performance in Perth. He said that "during the past 15 years he tried to study the major religious philosophies, but cheerfulness kept breaking through."

(Continued on page 5)

The key factor for population control is to raise awareness of the issues about which I spoke in Issue 42. This can be achieved at government level, but the dismal situation must also be more broadly promulgated through schools and via increased public debate. Raising the profile of population issues by appointing a Federal Government Minister responsible for population, should be a key first step. Such a minister would work closely with the Minister for the Environment and replace the current Minister for Immigration.



Signe Wilkinson (SIGNE) / USA

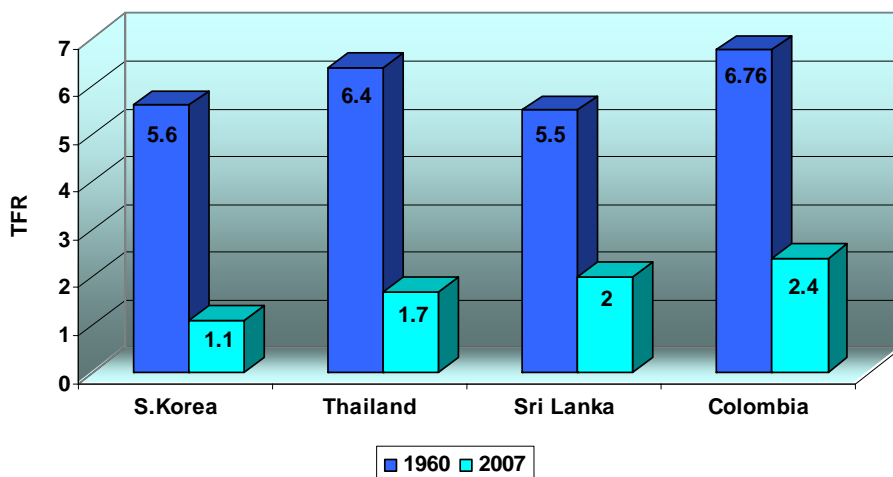
The debate and subsequent policy determination should centre on sustainable development, education and quality of life outcomes. Practical local measures might include improved education and training, so as to avoid the need for skills-based immigration, as well as a complete change to population policy. No longer should governments indulge in pro-natal stunts, such as the demeaning practice of paying or subsidising women to have babies. An immediate halt should also be called to payment for fertility treatment from the public purse (Medicare). Men and

women should be given free access to family planning advice and technology. In Australia, a woman's first two children should receive full government support for education and health services, but additional children should have access to these services on a user-pays-basis, since it is clearly inequitable for the public purse (taxpayers) to subsidise large families on welfare.

On the global front, Australia needs to increase and target its aid budget in a clear and focused way. Aid should be channelled only into programmes which aim to educate and empower women. It is clear from work undertaken in various places around the world that as education levels for women rise, fertility rates fall. Why would that be? The

answer is that, given the option, women generally don't want to have more than 2 or 3 children. On average, the better educated girls become, the fewer children they want to have, it's as simple as that.

TFR Decline among Nations with Well Organized



When I visited the impoverished Eastern part of Turkey 3 years ago, I learned that a survey conducted by Incremental Petroleum found that the average number of children per woman in several villages on its Selmo oilfield, was seven. This was clearly a poverty trap for those families, where children had no chance of an education and drifted away to the city to a life of crime or low paid factory work.

(Continued on page 6)

There are several excellent programmes aimed at improving quality of life in poor nations. Micro credit organisation **Grameen Bank**, founded by Nobel Prize winning Professor Muhammad Yunus, lends money to people with no capital and no collateral, based on a submitted business plan. Funds lent can be as low at \$50 and are usually less than \$200, but bad debts are remarkably low, with repayments scheduled to fit the cash flow of small operators. The New York based **Hunger Project** is another organisation operating with a similar business model.

The Hunger Project implements a proven and sustainable system, providing low-cost loans to people who are expected to repay funds, so that they can be lent out again in an expanding and virtuous cycle. The Hunger Project is community based, working within and with the support of a village or region. This system moves to areas where it arranges to set up so called "Epi-Centres" with the aim of becoming self-sustaining mini-banks or micro credit organisations for village groups, typically operated by the women, who appear to be more adept at managing money than their menfolk. This is a simple, low- cost option where all the money stays in a community. It relies on providing credit, which is repaid, so it is not aid in the traditional sense of giving money directly to the needy.

It seems to me that major religions are intent on increased congregations to support their particular set of beliefs at the expense of the long-term wellbeing of their followers. Effectively, large populations are being condemned by dogma to retched poverty and a life of basic survival, rather than a rich and fulfilling life, where knowledge and understanding are treasured rather than the size of one's congregation.

This cause needs a champion. It needs many champions, but when admired citizens make a stand, others will take note. The way is full of potholes but I am sure that we can all think of ways to lower global population growth. Critics will say we are misanthropes or racists and every effort must be made to ensure that arguments for population control and reduction are not race, nation or community specific. There are those who may argue that there will always be some new technology coming along to save us, but lessons from history should not be ignored. In the past, Easter Islanders and members of the many societies over history have withered under one form of population pressure or another. New technologies will indeed come along to make our lives more comfortable and fulfilling, but we would be foolish to carry on with business as usual in the blind expectation that everything will be all right in the end.

## *Soapbox Part 3*

On the 11th and 25th of February this year, StockAnalysis published its thoughts on issues surrounding global human population and its implications for our investment strategy.

Expanding populations in places such as Nigeria (140 million), Egypt (75 million), India (1.1 billion), China (1.3 billion), Indonesia (240 million, with over 80 million on Java alone), Bangladesh (154 million), Pakistan (173 million) and Brazil (185 million) should alert investors to a growing need for basic goods such as food, fertilisers and energy. StockAnalysis keeps watching for suitable food-based investments, but so far, companies such as **AACo** and **PrimeAg** have not been able to deliver consistent earnings, but fertiliser companies, such as **Wesfarmers** and others up the supply chain, like rock phosphate project developer **Minemakers**, offer better potential for earnings growth. Energy is a key theme of StockAnalysis. While renewable energy companies should hold long-term appeal, few have been able to demonstrate consistent earnings in a non-carbon constrained environment. It may be the next decade before we see real growth in wind, wave, geothermal and solar power companies, but the early innovators, such as **Carnegie Corporation**, **Geodynamics** and **Dyisol** hold the seeds for that growth.

In a world of dwindling fossil fuel supply, those companies that have unfettered access to large resources are in a strong position. These include **Woodside** and CSG companies such as **Arrow Energy**.

I received much favourable comment and encouragement from readers following the February editions, outlining the issues and suggesting some solutions, as well as this very thoughtful response from a subscriber, which I am pleased to share with you today.

*"On the subject of population growth, my experience of living in Indonesia for the five years from 1988 to 1993 was quite revealing:*

*When I arrived the population was 185 million. When I left it was 220 million (none of it my doing). About 85% of the population were still subsistence farmers, but an estimated 30-35 million were educated middle class. The country was a military dictatorship and the 'Sistim Korupsi' was the order of the day.*

*Up in the mountains and out in the country, the 200-odd peasant farmers-turned-miners at the small gold mine that I periodically ran, lived in three small mountain villages, without sanitation, running water, medicine or electricity.*

*Most of them had between five and ten children, and the most prolific amongst them, a contract labour supplier, local rice baron and small time mafia king, had six wives and 35 children - one in every millionth inhabitant of West Java province. Life was a continual series of births, marriages (often of necessity at 14 or 15) and deaths (often of disease, and frequently of babies, very young children, or young mothers in childbirth). It was not unlike slum-land Victorian England before Florence Nightingale, decent sanitation and Louis Pasteur. The average family had six or seven kids, of which four or five made it to adulthood and had kids of their own. And this was after 'Tahun Kontrasepsi Indonesia', the year when all local village officials were given green and yellow batik shirts decorated with pictures of condoms, IUDs, packets of pills, etc., and boxes of the relevant products to hand out to the villagers, which they presumably lost, or then stole and sold onto whatever black market would accept them.*

*Down in Jakarta though, the children of the university-educated middle classes, most noticeably the women who were our secretaries, translators and accountants, plus some of the more respectable expatriates' wives and girlfriends, had very few children: our female lands officer, a biologist, had none; our female accountant had none; our female tri-lingual secretary had none; our female treasurer had stopped at two, etc. The daughters of the Indonesian middle classes, having access to medicine, contraception, education and careers, made the same choice that western women make: quality is better than quantity, and there is more to life than being a sausage machine, that churns out children and then works herself into the grave to look after them all.*

*So, as we all know, if we think about it, the answer to the population problem is simple and obvious: education and contraception for all. End of problem. It solves itself.*

*A further interesting point was made to me by a UN consultant who visited the mine one weekend. He remarked that the UN philosophy in Africa had been: "Educate the women, not the men. The men will only use their education to get themselves into politically advantageous positions, where they can then become corrupt and from which they can make themselves personally wealthy. An investment in them is squandered. The women on the other hand, once educated, go on to educate their children, and an investment is multiplied."*

*This was certainly the case in Indonesia, where I quickly realised that the majority of my more competent employees, particularly at the professional and official level, were women. They worked hard, did things honestly and properly, and got results. A disturbing proportion of the men though were weak, lazy, ineffectual, dishonest and corrupt.*

*And politically incorrect though may be to say so, I observed a reason for this difference, first-hand in those little villages. All 'privileged' little boys from the age of five onwards, were marched off several times a day to the village mosque, where crooked (as in stature) old men then ground some version of an inappropriate and bewildering religious dogma into their young and impressionable male minds. The girls, on the other hand, being regarded as religious second-class citizens, were only allowed into the sanctum once a week, were kept apart from the sacred centre of things, and were denied the full inculcation of the faith. As a result, most men went on to live out their lives riven by guilty sexual, spiritual and social phobias, running at complete cross-purposes to their innate inclinations, instincts and natural common sense. Whilst the women, spared this indoctrination, developed naturally into normal, decent, thoughtful human beings.*

*Hence the Indonesia of those days: a male-dominated military theocracy, which was a basket-case of a nation, run off the tracks at every turn by a bunch of wrong-headed lunatics. And which had a burgeoning population that simply grew and grew, and which I see has today is said to have reached 240,271,522 (<https://www.cia.gov/library/publications/the-world-factbook/geos/id.html>)."*

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