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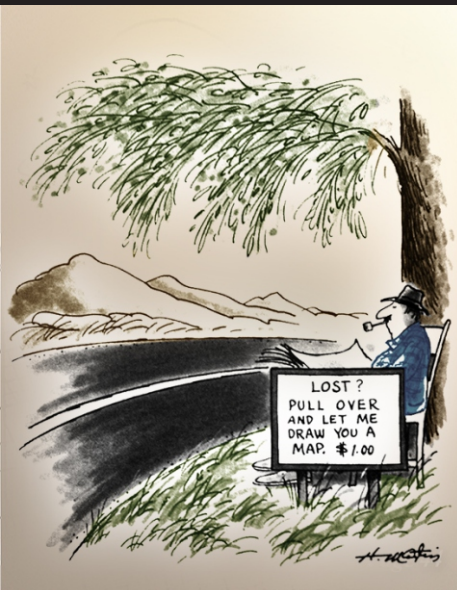
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- GCC needs to diversify further to cut oil dependence
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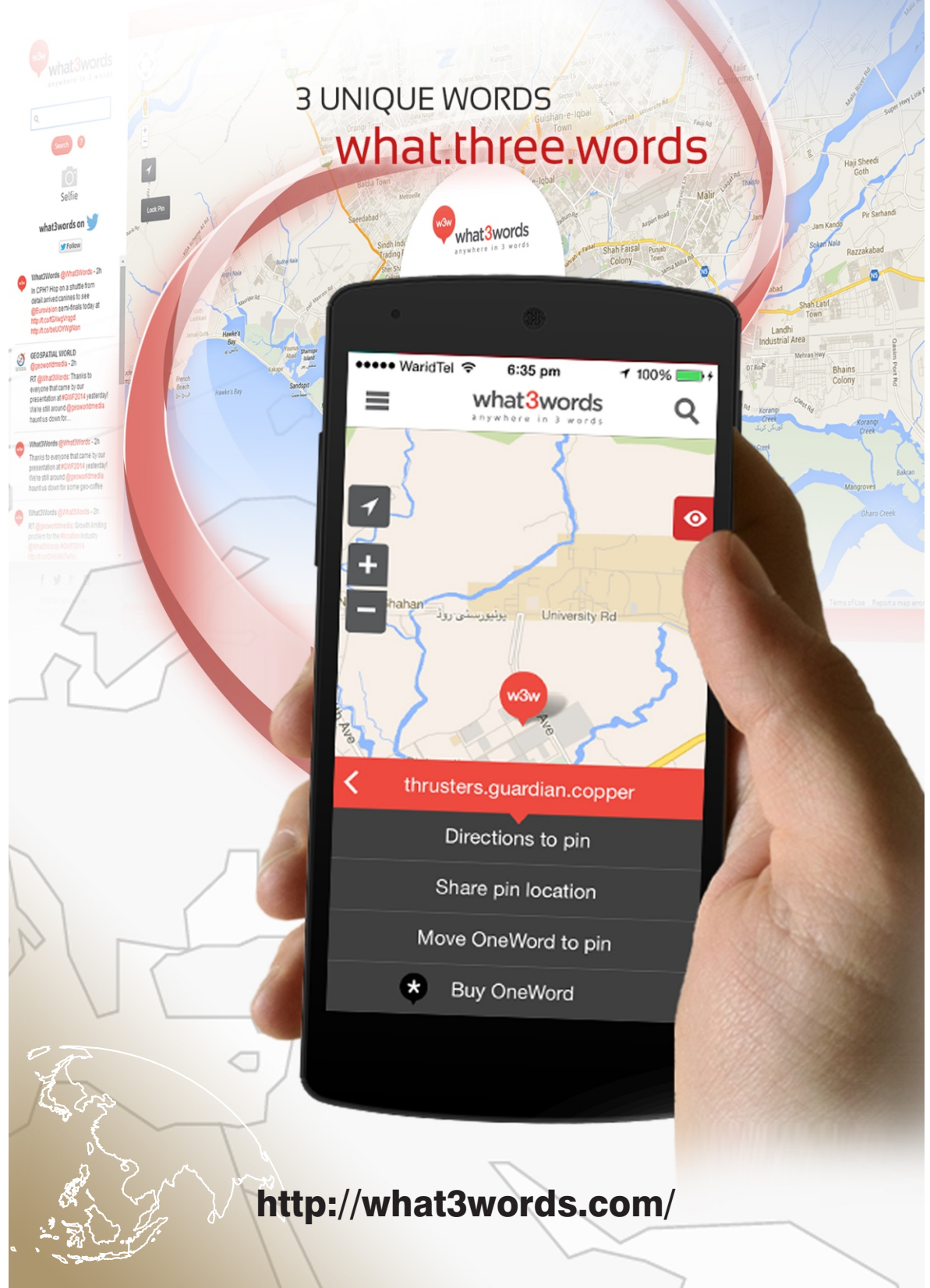- European tourist visits Iran up 240%

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Spatial Knowledge & Information Management for **Bringing Simplicity to Business Processes**

ALHASAN SYSTEMS proudly presents the latest edition of SKIM Magazine. In today's fast paced world, society is faced with numerous challenges that could be aptly handled through technology. Spatial Knowledge & Information Management [SKIM] magazine's framework spotlights many cross cutting themes, including: Policy, Governance, Health, Education, Energy, Environment, Agriculture, and Natural Resources. Our monthly magazine covers the most pressing issues and demonstrates how the latest technologies can be used to find the most optimal solutions. We intend to showcase knowledge-based decision making and the application of technologies that could bring about a fundamental change in societal growth and development.

In this edition, we take a look at the latest phenomenon of 'What3Words', and how it can change the way we search for locations, down the road or across the planet. Alhasan Systems' UK-based technology partner 'What3Words' has developed a universal-address solution, that makes it easy for people (technical or not) to communicate their precise location; even if you are standing in the middle of the Sahara desert or are lost somewhere in the Bermuda triangle! In many ways, a 'what3words' address is more specific than a postal address. It can even locate places that don't have a postal address and is much easier to communicate these locations than GPS coordinates.

'Technology, Education and Investment in Domestic Production' by Michael Calabrese, explores the widening gap between the supply and demand of Human Capital in the GCC countries and the need to improve investment efforts in the relevant sectors.

Steve Eggleston looks at the use of latest technologies in GIS. His article, 'The Future of a United Middle East?' focuses on Qatar's ESRI Systems, which can be used as a model for the other Middle Eastern countries.

Polio has recently become a major concern for Pakistan. It's become so large a problem that the World Health Organization's International Health Regulatory Emergency Committee has imposed a vaccination requirement on Pakistani travelers, effective on June 1st 2014. Muhammad Bazil highlights the issue in his article The Polio Epidemic in Pakistan - A Global Concern with Local Roots.

In "Tourism and Technology in the GCC Countries" Rabeea Wajeeha gives us an in depth analysis of the tourism throughout our region. Her article explores the role that the latest technologies can play in maximizing the potential of our tourism industry.

This month's Business Psychology section of the magazine brings to you a very thought provoking article by Eleanor Chin: "Unhappy at work? Change your job while still in it."

On a much lighter note, we bring you tips on living a more balanced life with holistic livingby Kiran Zahra.

Lastly, we present "Impacting Sustainable Behavior and Planning in Smart City," a case study by Nasrin Khasari, Ali Mostashari and Mo Mansouri. It's an example of success by design.

At SKIM Magazine, we hope to accomplish Alhasan Systems' larger mission: To support capacity building, to protect our assets and safeguard our citizens; and ensure community involvement; to strengthen our socio-economic growth; and to bring clarity and coherence to our efforts for our country and our region.

It will give me immense pleasure to hear from those who would like to contribute to this pioneering effort.

Mehdi Bokhari
Executive Editor
bokhari@alhasan.com

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CONTRIBUTORS

Michael Calabrese has been writing throughout his professional life. As a business writer, Michael's proposals have won government contracts from the Department of Defense, Justice, the EPA and the SEC. Earlier in life, Michael was Director for Public Information for the National Space Society. He lives in Cincinnati, Ohio, USA.

Muhammad Bazil is a freelance journalist based in Pakistan. He has written hundreds of published articles and blog posts for numerous international news websites and magazines. His articles have been features on the homepage of Yahoo! and MSN.

Steve Eggleston is a law school Valedictorian, award-winning law professor, author, lecturer, and experienced trial lawyer. His non-fiction work, "Labor and Employment in California," published by Lexis-Nexis, is still in print after 21 years. He lives with his family in Las Vegas, Nevada, USA.

Eleanor Chin is a life and executive coach. Founder and President of Clarity Partners Coaching and Consulting, she works with institutional and individual clients to support them as they navigate change, create inclusive and dynamic systems, and leverage strategic strengths for growth, learning and competitive advantage.
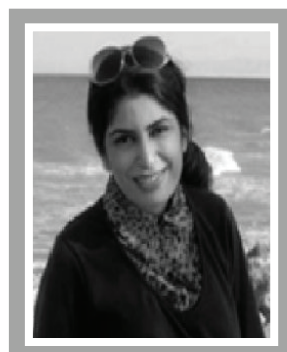
Kiran Zahra is a Certified Health Coach, a Nutrition Therapist and loving mother of one. She is an accomplished health writer with her articles published in numerous international newspapers like the The Express Tribune and Guardian Liberty Voice. She received her training at Integrative Nutrition in New York City as well as SNHS, UK.
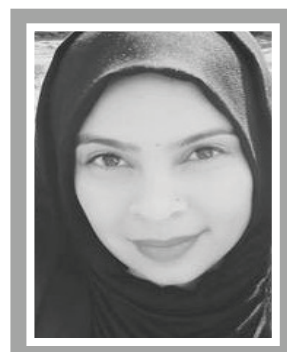
Rabeea Wajeeha is a freelance journalist and Sub-Editor SKIM Magazine. In the past, she has worked with the Arbitrage Magazine (North America's largest, student-driven business magazine) as a Director. and a contributor. She grew up in Toronto and recieved her education from York University, in Canada.

Dealing with the Wealth Gap

Replacing physical Capital with Human Capital

By: Michael Calabrese

Since the petro-dollars boom of 2002-2008 the Gulf States have gained extraordinary wealth. Those gains financed national economies, provided benefits for citizens and created unimagined wealth for the ruling classes throughout the region. It also created a tremendous gap between the super-rich and everyone else.

Persian Gulf leaders have provided a number of benefits for their people and these years have witnessed large-scale investments in housing and education in many countries. Over the decades an educated generation has immerged that would normally take its place in their nations as a productive, prosperous middle class. A number of high-level government and international academic studies have been undertaken to find ways to close the gap. They point to the need for a new investment in "human capital."

"The challenge for policy in oil-rich economies of the Persian Gulf is to raise the productivity of the region's educated citizens, men and women, to such high levels that they can compete globally despite their high reservation wages. Success in global competition depends increasingly on a nations' quality of human rather than physical capital. The current economic development strategy in

the region of using the hydrocarbon wealth to facilitate the accumulation of physical capital by easy importation of skilled workers is good for accumulation of physical capital, but not for the accumulation of productive human capital."

Over the last few years, a new phrase has immerged to describe the phenomenon: the "Rentier" economy. Oil "rents" (leases that provide for oil drilling, refining and the processing of petroleum products) create massive profits without creating domestic production, or the domestic employment that traditionally accomplishes it. It is a problem that is unique to the Persian Gulf and there are three major economic impacts:

• The revenues generated by such "rents" is genuine, but the availability of lower cost migrant labor and workers throughout the economic structure means that business chooses to hire foreign workers in place of educated and thus higher cost, nationals. In Qatar and UAE, non-national labor now exceeds 80% of the work force. There is a similar employment picture in other Gulf States as well.

• Whether they are the recipients of benefits of state programs (supplemental income, food, education grants etc…) or are employed either by the government directly or by industries where the state

owns majority, many citizens of the Gulf States are dependent upon the government. Independent economic development hasn't occurred.

• As in other nations with increases in higher education, birthrates have slowed, but employment lags behind due to the import of cheaper foreign labor. It is one of many anomalies in the Persian Gulf

Political Impacts in an Age of Communications

Throughout the West (and perhaps in some Persian Gulf capitols) a great deal was made over the use of cell phone communications and its role in the "Arab Spring." It is true that increased communications supported the organization of demonstrations and the exchange of information, but perhaps that isn't the only issue for Persian Gulf states now. The digital electronics era means that your telephone is your computer; your television, your internet and your email. The world and its news and opinions are being delivered to the user directly. Citizen of the Persian Gulf, from all countries are on social media site and in discussion groups, and they are meeting their counterparts across the globe.

There is always resistance to change. It happens everywhere. Increased investment

in education may seem unsettling to some. The reality is that change is ever present and technology has placed it at the finger tips and in the minds of millions of people. There is an expression in the greater Middle East: "Books are written in Cairo, printed in Beirut, and read in Baghdad." It is an interesting phrase, but it's out of date. Today, books are written in cities through the Middle East, they are printed in "The Cloud" and read everywhere. That includes the educated populations of the Persian Gulf. The Jinn will not go back in the bottle and the people who read those books and join in larger global discussions, vote.

One of the best examples of that voting is found in the election of Iran's Hassan Rouhani in 2013. It was a hotly contested election with all factions in Iranian society competing for the presidency. Mr. Rouhani was not favored to win, but in the end the Iranian people spoke. Mr. Rouhani's election was a call for more normalized relations with the West and economic relief and the delivery of goods and services to the people of Iran. What we heard was the voice of Iran's educated population speaking. It is just one factor in a complex situation, but it created a new urgency in the search for solutions.

There is little surprise that the educated citizens of the Gulf States are pressing

for domestic investment. They look for increases in personal freedom and better access to consumer goods. The nations of the Persian Gulf know that the best solution lies in the development of domestic production in a diversified economy.

Long Term Planning and Diversification

At the Annual Meeting of Ministers of Finance and Central Bank Governors (October 2013), the Gulf Cooperation Council (GCC) received the "Economic Prospects and Policy Challenges for the GCC Countries." The report was prepared by the staff of the International Monetary Fund and highlights the many obstacles faced by the Persian Gulf States.

This comprehensive report covers a wide range of issues: financial structures, the instability of world markets in a time of change and the need for a balanced long-term policy. Among the issues covered, two stand out:

• No nation can rely on any single source of revenue and the days when oil revenues can be counted upon as a sole source are ending.

• "In Bahrain and Kuwait, the non-oil fiscal deficit is expected to increase further this year, which is a particular concern in Bahrain given government debt is already quite high. Early action is needed to put the non-oil fiscal deficit on a firm downward path. Over time, fiscal consolidation will be needed in most countries to ensure that

fiscal buffers remain at adequate levels and to raise savings for future generations. With the exception of Qatar, all countries are running non-oil fiscal deficits that are larger than is consistent with an equitable intergenerational allocation of oil revenues."

The answer lies in investment in diversified economies and no single solution will apply to all states within the Persian Gulf. There may be many answers to the problem, an increase in manufacturing or the rise of the merchant class throughout the region, but for the most part, the solution will be found in the transition to a knowledge-based economy.

That creates new challenges and questions: How can this transition be supported? Is there an infrastructure present now?

The UAE responded to these questions with its Ministry of Labor "Emiratization" policy, setting employment goals for both the government and private sector. The initial response by private business was less than hoped for, but that may be turning around now.

Quotas may be good for setting goals, but qualifications are what count. To meet the needs of private business, the UAE is turning to private enterprise to develop learning tools for the 21st Century. UAE Ministry of Education opened its "Technology Hub" with its new partners Microsoft and Etisalat. This initiative may prove to be a meaningful solution and today, an international community of

learning businesses sees the Persian Gulf as fertile ground for business development.

The UAE and the other nations of the Persian Gulf need broad-based learning infrastructures that are rapidly scalable to meet new needs as they evolve. It means new institutions with new tools and new curricula for a modern world. The key will lie in connecting education with career opportunities now and in the future in fields like Islamic finance, transportation and port development, the telecomm industry and biotechnologies and medical research.

The need to improve investment efforts: Is The Dubai Model Still a Model?

With its increase in oil revenues Dubai took advantage of its new-found wealth with a diversification plan that saw the development of its financial industry, one of the largest aluminum smelting centers in the world, tourism and port development. Unfortunately the business community found it cheaper to import labor; leaving residents who required higher pay, unemployed. It's an issue throughout the region and today, 70% of Dubai's workforce and 90% of its residents are foreign born. It would be easy to label the Dubai Model as the cause of today's problems. That picture is gradually changing as more Dubai nationals take their place in industry and finance, but it is a slow process. It might be that the Dubai Model for development may need the UAE Model in education in order to achieve greater success.

If any words can define the 21st Century, they are "change" and "connection." Economic upheavals like the Wall Street meltdown, the turmoil within the EU and the increasing conflicts surrounding the Trans-Pacific Partnership Agreement (the Asian "free-trade" agreement) show that only resilient national economies can weather the storm. Perhaps the Dubai Model is the way to go. Maybe it can be adapted to meet the different needs of different nations, or a new model will emerge entirely.

The people of the Persian Gulf are learning the same lessons as people in the West. Corporations are not people and they certainly are not nations. People don't live on spreadsheets, they live in countries. The investment in "human capital" will yield two products that are beyond measure on a spreadsheet: Stability for a nation's government and a future for its people. ∎

GCC needs to diversify further to cut oil dependence

Dubai: The falling oil prices will pose a challenge to the Gulf Cooperation Council economies in the near future and the government should step up efforts to develop export oriented industries says the ICAEW and its research partner, the Centre for Economics and Business Research (Ceber).

GCC economies are now more dependent on commodity exports than they were 10 years ago despite the diversification agenda.

Commodities still account for 86.8 per cent of Saudi Arabia's total goods exports by value and nearly two thirds of the UAE's.

Even Bahrain, with the smallest hydrocarbon resources of any GCC economy, relies on commodity exports for nearly three-quarters of goods exports.

Plentiful, cheap energy should provide the Middle East with a competitive edge when it comes to manufacturing. However, modern manufacturing also relies upon skilled workers and high-tech equipment. Middle Eastern economies have, so far, struggled to boost the proportion of their goods export revenues accrued from these activities.

Currently the UAE, Bahrain and Saudi Arabia rank in the top half of the World Bank's Knowledge Index, a comparison of 145

countries and their ability to develop modern competitive industries, coming 41st, 52nd and 53rd respectively. However, with competition from other emerging markets intensifying, the GCC countries must now improve education, increase labor productivity and attract more foreign direct investment, according to Ceber analysts.

Investment Corporation of Dubai revealed financial results for the First time

As the Gulf emirate seeks to tempt investors back to its reviving economy, The Investment Corporation of Dubai (ICD), has for the first time ever revealed its financial results. This comes as part of a strategic move to raise about $750 million in its first Islamic bond issue. ICD is the owner of the Emirates airline, the airport duty-free business and Emaar, a property developer.

The prospectus accompanying the band sale revealed that revenues at ICD, a barometer of Dubai's economic health, rose 18 per cent to $24.8bn in the second half of 2013, driven by increased airline passengers.

The latest full-year revenue figure for 2012 stood at $43.8bn, the equivalent of around half of Dubai's gross domestic product that year.

However ICD's net profits fell 4.7 per cent to $2.2bn in the second half of last year, dragged down by higher oil prices and financing costs. The holding company, (run by Mohammed al-Shaibani, a senior Dubai official), controls assets of $160bn.

Inflation rates highest in Kuwait at 2.96%, while Oman lowest at 0.73%

Muscat: The Statistical Centre for the Cooperation Council for the Arab Countries of the Gulf (GCC-Stat) recently released its inflation report revealing that inflation rates in the GCC had increased between 0.73% and 2.96% by end of March 2014 when compared to March 2013.

Kuwait recorded the highest rate of inflation with an increase of 2.96%, followed by 2.6%

for both Saudi Arabia and Qatar, 2.3% for Bahrain, 1.85% in the United Arab Emirates. Oman registered the lowest rate of inflation with a 0.73% increase in the consumer price index.

As for the main categories for the consumer price index in each GCC member state, figures showed an increase over the 12-month period through March 2014 as follows: Education Overall pan-GCC figures show that costs for Education witnessed the highest growth, 6.24% in Oman. 5.0% in Bahrain, 4.39% in the United Arab Emirates, 4.06% in Kuwait and 3.7% in Saudi Arabia.

Food & Beverage prices in Bahrain went up by 5.6%, while Tobacco prices in Saudi Arabia also increased by 6.4%.

Housing and Energy costs recorded highest increases in Qatar, growing by 5.7%, while costs for Furniture and Household Goods in Kuwait grew by 4.83%.

Pakistan receives CSF inflows worth $370 million

KARACHI: Pakistan has received a tranche of $370 million under the head of Coalition Support Fund (CSF) during the second half of the current fiscal year.

The country is expected to receive $702 million CSF inflows during the second half of FY14, of which $352 million were arrived in February 2014. With $370 million fresh external receipts, total CFS inflows now stand at $722 million, surpassing the target of $702 million fixed for the January-June 2014 period.

The International Monetary Fund (IMF) is also likely to release around $550 million under the Extended Fund Facility to Pakistan by the end of June on the completion of the third review on Pakistan economy.

The State Bank is also close to achieving $9.5 billion in its international reserves accumulation target set by the IMF to complete the third economic performance review on Pakistan.

Pakistan's foreign exchange reserves surged to $13.132 billion during the week ended May 16 from $12.044 billion in the previous week.

The Polio Epidemic in Pakistan

A Global Concern with Local Roots

By: Muhammad Bazil
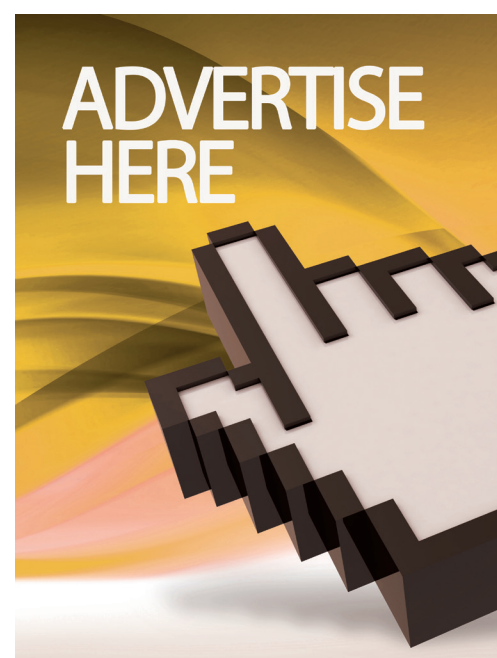
Polio is a viral infection which causes inflammation of the spinal cord and reaching, in severe cases, all the way up to the brain stem. The effect is typically muscle weakness and paralysis. While 90% of infections do not present any symptoms at all; when symptoms do arise, they can be severe and often fatal.

Large scale epidemics first appeared in the late 19th century, caused by poor sanitation methods. Because polio is transmitted predominantly by fecal-oral contact; contaminated water was—and continues to be—a major culprit. A vaccine was finally developed in the 1950s which led to a dramatic decrease in the number of infections over the next decades. However, the number of infections has started to increase in certain regions of Asia, Africa and the Middle East. As a result, the World Health Organization has officially declared a public health emergency of international concern.

Today, there are two types of vaccinations in use globally. One is delivered by a needle directly to the blood stream and the other is delivered orally in the form of droplets. Patients require two injections or three doses of the oral vaccine in order to become fully immunized to all types of polio. This has proven to be a notable obstacle in the efficacy of the vaccine as it is difficult for many patients—particularly in poor, rural areas—to make

Predictors of immunization status against Polio among children 12-23 months

Population Circumstances	Total Sample (n=1080)	Card plus history (n=1030)		Card (n=561)		Fully immunized Valid (n=432)	
	n (%)	n (%)	Sig.	n (%)	Sig.	n (%)	Sig.
Parental education							
Illiterate	452 (41.9)	424 (93.8)	P=0.054	202 (44.7)	P < 0.001	147 (32.5)	P < 0.001
Primary	321 (29.9)	313 (97.5)		190 (59.2)		149 (46.4)	
High school and above	307 (28.4)	293 (95.4)		169 (55.0)		136 (44.3)	
Siblings							
No	231 (19.7)	209 (98.1)	P=0.036	131 (61.5)	P < 0.001	99 (46.5)	P < 0.001
1-3	516 (47.8)	493 (95.5)		277 (53.7)		222 (43.0)	
>3	351 (32.5)	327 (93.4)		153 (43.6)		111 (31.6)	
Condition of house							
Muddy/Mixed	636 (58.9)	599 (94.2)	P=0.027	298 (46.9)	P < 0.001	228 (358.)	P = 0.001
Cemented	444 (41.1)	431 (97.1)		263 (59.2)		204 (45.9)	
Health seeking behavior							
Once or more a month	297 (27.5)	287 (96.6)	P=0.048	146 (49.2)	P = 0.053	119 (40.1)	P = 0.942
<Once a month	174 (16.1)	172 (98.9)		103 (59.2)		71 (40.8)	
Once a Year	171 (15.8)	161 (94.2)		86 (50.3)		68 (39.8)	
Once in 6 month	87 (8.1)	82 (94.3)		48 (55.3)		38 (43.7)	
<Once a Year	351 (32.5)	328 (93.4)		178 (50.7)		136 (38.7)	

Note: The table shows row percentages. Pearson chi-square test and Fisher's exact test are employed to obtain 2-sided significance (sig.)

multiple visits to the healthcare center where the vaccinations are available.

Currently, there are immunization campaigns sponsored by the WHO, Rotary International, and other groups which are attempting to eradicate the virus completely. These campaigns have seen some success. Notably, they have officially been able to declare India free of the polio virus. However, other regions lag behind as the issues affecting the spread of polio reach beyond the simple biological or technical explanations. Pakistan is one of the countries where cases of polio infection continue to rise despite these global efforts to immunize and vaccinate against it.

The Underlying Causes of the Polio Epidemic

Pakistan has become one of the major exporters of the polio virus in recent years resulting in the need for a reexamination of current policies governing the vaccination initiatives currently in place in the region. The number of cases is growing year by year. The majority of the new cases being reported are found in North Waziristan—an area which is currently experiencing a lot of conflict.

As a result neighboring countries in the Gulf have begun to place travel restrictions on Pakistan and other nations experiencing an increase in the number of polio cases. Israel has managed to successfully eradicate the disease so that, even though traces of the polio strain that is found in Pakistan have been detected in Israeli sewers, no new outbreaks have been recorded there. Meanwhile in Syria, polio has begun to spread once again despite the nation having thoroughly eradicated the virus 14 years earlier. Syria has now become one of the major incubators of the disease in the region along with Pakistan. Fortunately, the situation is not so dire in all countries. Like Israel, Oman and many others show continued success in keeping the virus at bay. The success seen in these countries highlights the importance of finding an effective method of vaccinating against the disease.

While global initiatives to vaccinate against polio have been relatively effective in decreasing the number of incidences of polio around the world, Pakistan has continued to see a rise in polio cases. There are many reasons for this including ineffective implementation of vaccination programs; lack of knowledge or resources; and socio-political issues like mistrust of the system and war.

Rural areas are particularly threatened by polio outbreaks as health services are already limited in these areas. Many children remain unvaccinated or not fully vaccinated because healthcare centers are too far; the staff and resources are too limited; or the importance of vaccination is not properly understood.

Due to a lack of consistent recording methods, it is difficult for vaccine administers on the ground to keep track of who has and has not received the vaccine. This results in some people being entirely skipped over while others receive more doses than necessary. Effects of overdosing on polio vaccinations are, as of yet, unclear. However, whether or not it has negative side effects, it is still an inefficient use of resources.

Researchers are strongly recommending techniques to be implemented to better track vaccinations and ensure that nobody falls through the many cracks in the system (Kazi et al 2014: 8). In 2011, a pilot study in Nigeria found that the use of GIS (Geographic Information Systems) technology which would track the movements of vaccine administers could be an invaluable tool in rural areas where it has proven difficult to keep track of who

Causes of intervention failure

Lack of appropriate credible information on health needs and service costs
Resistance from politicians
Resistance from bureaucrats and health service managers
Lack of clear and shared understanding and commitment to equity
Complex budget structures
Centralized decision-making processes and culture
Interventions from project external to government
Difficulty of reforming one public sector in isolation
Difficulty of using trial districts
Lack of appropriate budgeting skills
Lack of central guidelines

has already been vaccinated. However, it has yet to be implemented in Pakistan. By using technology like GIS and GPS, government can ensure the safety of polio workers and their teams in tribal areas and can also keep track of the number of houses they have covered.

The problem is further exacerbated by a ban placed on polio vaccinations by the Taliban after it was discovered that a Dr. Shakil Afridi had worked with the United States to lead a fake vaccination campaign which was then use to seek out relatives of Osama Bin Laden (and eventually Bin Laden himself). The distrust cause by the outbreak of this scandal has proved a substantial setback in the plan to eradicate polio.

As systems of social security crumble in times of war; vaccination becomes increasingly difficult and the threat of infection grows. In the heavy conflict zones of Pakistan, vaccination initiatives have been suspended entirely. This suspension, coupled with the fact that conflict zones are at higher risk for infection due to an erosion of basic sanitation measures has led to more and more cases of polio spreading throughout Pakistan and even beyond its borders into neighboring countries. Cases arising in Afghanistan, Iraq, and Syria have all been traced back to Pakistan showing how truly global such localized issues can become.

The roots of the disease can be found in the widespread poverty and war which currently afflict the region. Because of this, global vaccination campaigns which lack any effective measures to address either of those phenomenon have failed to see the same success in Pakistan as they have in other regions around the world.

Modifications Needed for More Effective Polio Eradication

Social and political factors contributing to the failure of polio eradication initiatives. Many studies have been done recently to analyze the efficacy of current immunization campaigns in Pakistan. The general conclusions are the same: current global initiatives are unsuited to address the localized needs of specific regions.

Furthermore, these initiatives do not do enough to address the various socio-economic and political obstacles which strongly impact the success of actually implementing these initiatives. There are many localized issues such as poor resource allocation, ineffective educational campaigns, and many other problems with the healthcare system as a whole. This is particularly the case in rural areas where access to the limited healthcare services available is even more problematic.

The limitations of these global initiatives are, perhaps, made most clear by the fact that "Pakistan reportedly achieved all targets set in the GPEI [Global Polio Eradication Initiative] strategic plan but failed to interrupt virus transmission" (Mushtaq et al 2010: 2). Polio continues to spread despite meeting global standards set.

Socio-economic factors which contribute to underutilization of vaccination

In this chart, we can see some of the socioe-conomic factors which contribute to this failure of the global campaign. Children from low income households or parents with little to no education are far less likely to be vaccinated against polio than those of more well-off homes and educated parents.

Thus, in order to effectively implement vaccination campaigns, one solution would be to implement intensive education programs that target the specific needs of each region. In one study, it was found that providing in-home education about vaccination—by personally visiting each home and discussing the issue with parents—improved vaccination rates by 39%.

Another major problem is poor methods of resource allocation. Many of the global initiatives fail to see resource allocation as more than a simple logistical issue and completely ignore the political element. Thus, these initiatives need to work more closely with local community leaders and politicians in order to create a better system of resource allocation which will not meet political resistance.

Related to this problem is the issue of failing to analyze the healthcare system as a whole and, instead, analyzing each component as an isolated mechanism which are all of equal weight and unaffected by each other. Attempting to address a problem in one component of the system without recognizing the impact it will have on other mechanisms will only cause more problems. Instead, holistic solutions are needed which bring reform to the whole system so that it continues to function as a cohesive unit.

Beyond these issues of implementing effective polio eradication measures, there are also issues in how these initiatives measure efficacy. For example, the World Health Organization (WHO) put in place the Building Blocks framework which is meant to standardize research methods for analyzing how successful the current polio eradication initiatives are.

However, while the "Building Blocks framework is valuable because of its simplicity and ability to provide a common language for researchers, it is not suitable for analyzing dynamic, complex and inter-linked systems impacts" (Mounier-Jack et al 2014: 1). In order to improve this framework it should be modified to address the way in which the different components of the healthcare system interact and study demand in the region (that is, the perspectives and understandings of the population being studied in regard to vaccination and infection).

In sum, the global initiatives currently need to put in place practical measures for localizing their programs and creating policies which take into account the variety of political and socio-economic factors which limit the efficacy of vaccination programs. By only addressing the technical and logistical issues as they are currently; they are failing to create effect strategies which will target the obstacles which are posing the most threat to the eradication of polio in Pakistan.

This current epidemic of Polio underscores many key issues which are becoming more and more urgent in recent years. That is, the growing need to understand the complex ways in which global and local systems are interconnected and the importance of understanding and addressing the social, economic, and political aspects of diseases which are traditionally thought of in purely biological or medical term. ■

CONFIRMED WILD POLIO VIRUS - AFGHANISTAN & PAKISTAN
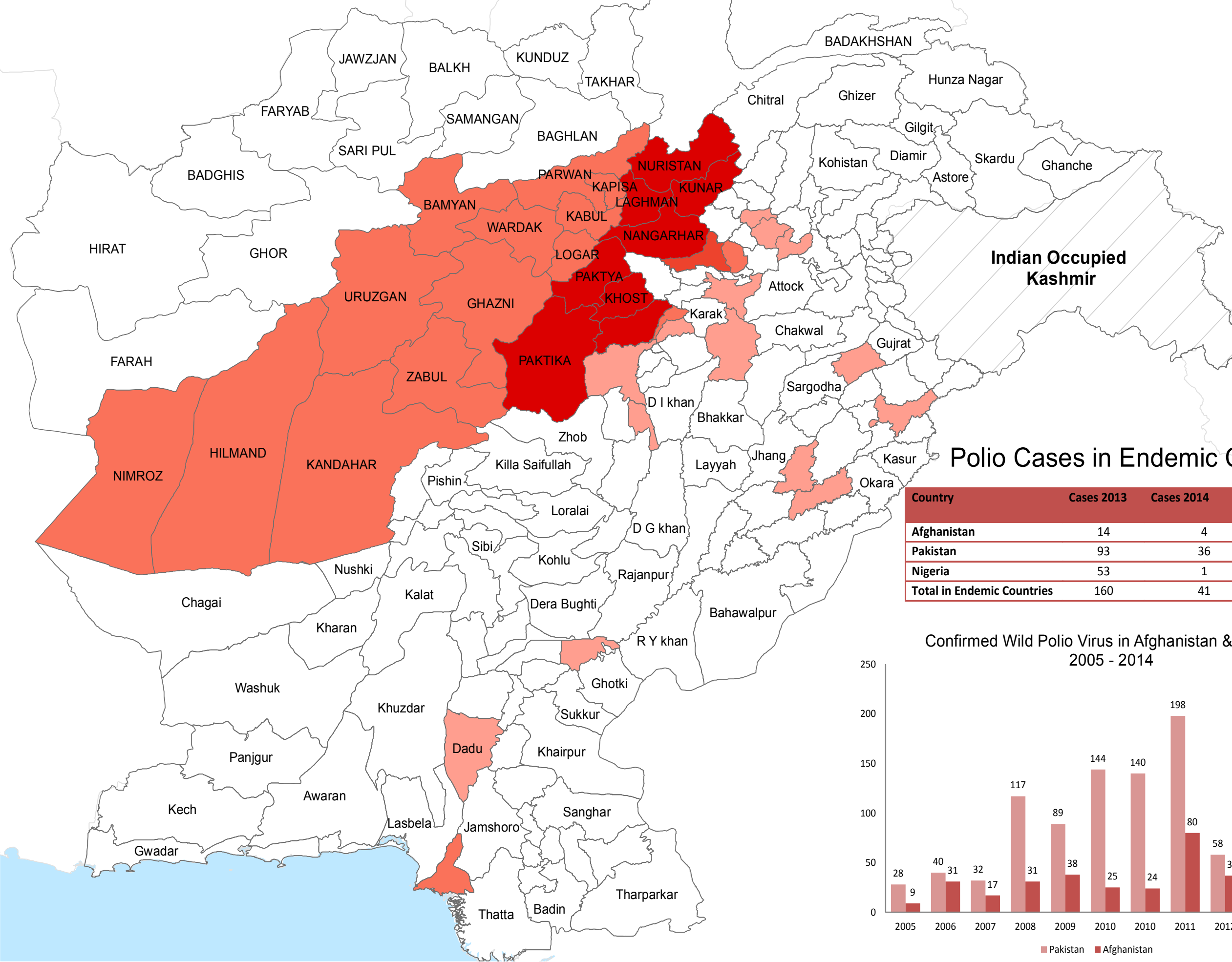
Legend

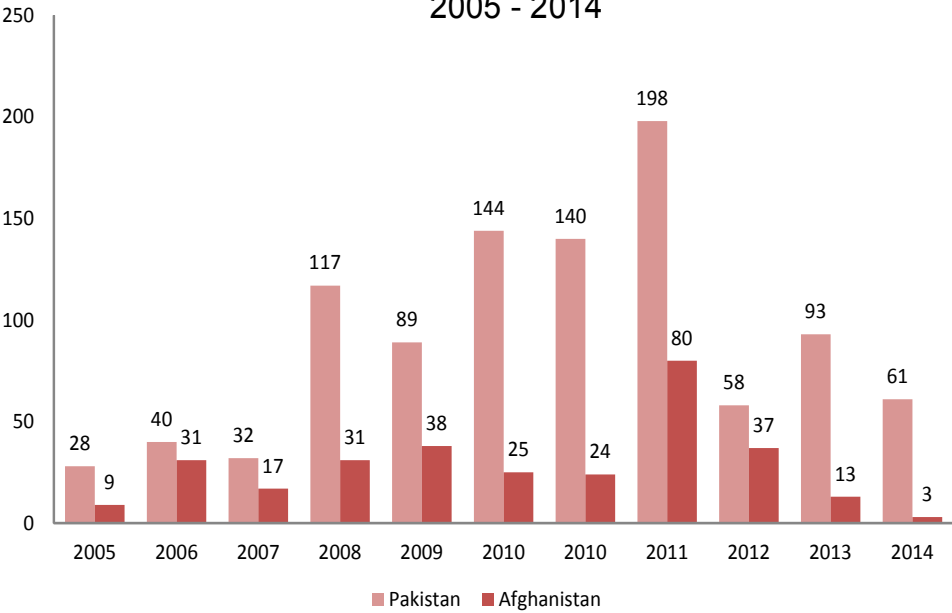**Number of Polio Cases Afghanistan - 2013**

- No Virus Found
- 1
- 2 - 12

Number of Polio Cases Pakistan - 2013

- No Virus Found
- 1 - 3
- 4 - 8
- 9 - 19
- 20 - 36

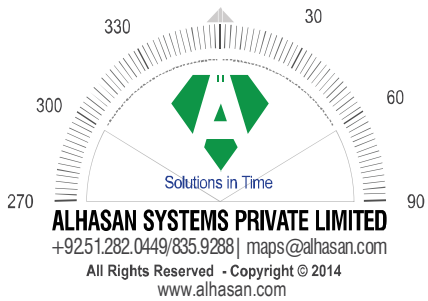|	
Date of Creation	May 28, 2014
Projection/Datum	WGS 84 Geographic

N

0   65   130   260
Kilometers

330   30
300   N   60
270   90

ALHASAN SYSTEMS PRIVATE LIMITED
Solutions in Time
+92.51.282.0449/835.9288 | maps@alhasan.com
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Data Source(s)

Ministry of Public Health: Afghanistan Polio Cases
Polio Free Pakistan: Pakistan Polio Cases

Map province labels: JAWZJAN, BALKH, KUNDUZ, TAKHAR, BADAKHSHAN, FARYAB, SAMANGAN, BAGHLAN, Chitral, Ghizer, Hunza Nagar, SARI PUL, BADGHIS, PARWAN, KAPISA, NURISTAN, KUNAR, Gilgit, Diamir, Skardu, Ghanche, HIRAT, GHOR, BAMYAN, WARDAK, LAGHMAN, Kohistan, Astore, KABUL, NANGARHAR, LOGAR, Indian Occupied Kashmir, URUZGAN, GHAZNI, PAKTYA, KHOST, Attock, FARAH, ZABUL, PAKTIKA, Karak, Chakwal, Gujrat, D I khan, Bhakkar, Sargodha, HILMAND, KANDAHAR, Zhob, Layyah, Jhang, Kasur, NIMROZ, Killa Saifullah, Loralai, Okara, Pishin, D G khan, Nushki, Sibi, Kohlu, Rajanpur, Chagai, Kalat, Kharan, Dera Bughti, R Y khan, Bahawalpur, Ghotki, Washuk, Khuzdar, Sukkur, Panjgur, Khairpur, Dadu, Kech, Awaran, Sanghar, Lasbela, Jamshoro, Jhotki, Gwadar, Thatta, Badin, Tharparkar

Polio Cases in Endemic Countries

Country	Cases 2013	Cases 2014	Date of Most Recent Case
Afghanistan	14	4	22-Feb-14
Pakistan	93	36	7-Mar-14
Nigeria	53	1	1-Feb-14
Total in Endemic Countries	160	41	

Confirmed Wild Polio Virus in Afghanistan & Pakistan 2005 - 2014

Year	Pakistan	Afghanistan
2005	28	9
2006	40	31
2007	32	17
2008	117	31
2009	89	38
2010	144	25
2010	140	24
2011	198	80
2012	58	37
2013	93	13
2014	61	3

PAKISTAN HEALTH PROFILE

146
out of 187
Human Development
Index (Rank) - 2013

HIV prevalence among 15-49 year old pregnant women
2010/11 - 0 . 041 %

6th Largest Population in the World (2012)

184 Million People (2012)

$1,368
Income Per Capita (2012)
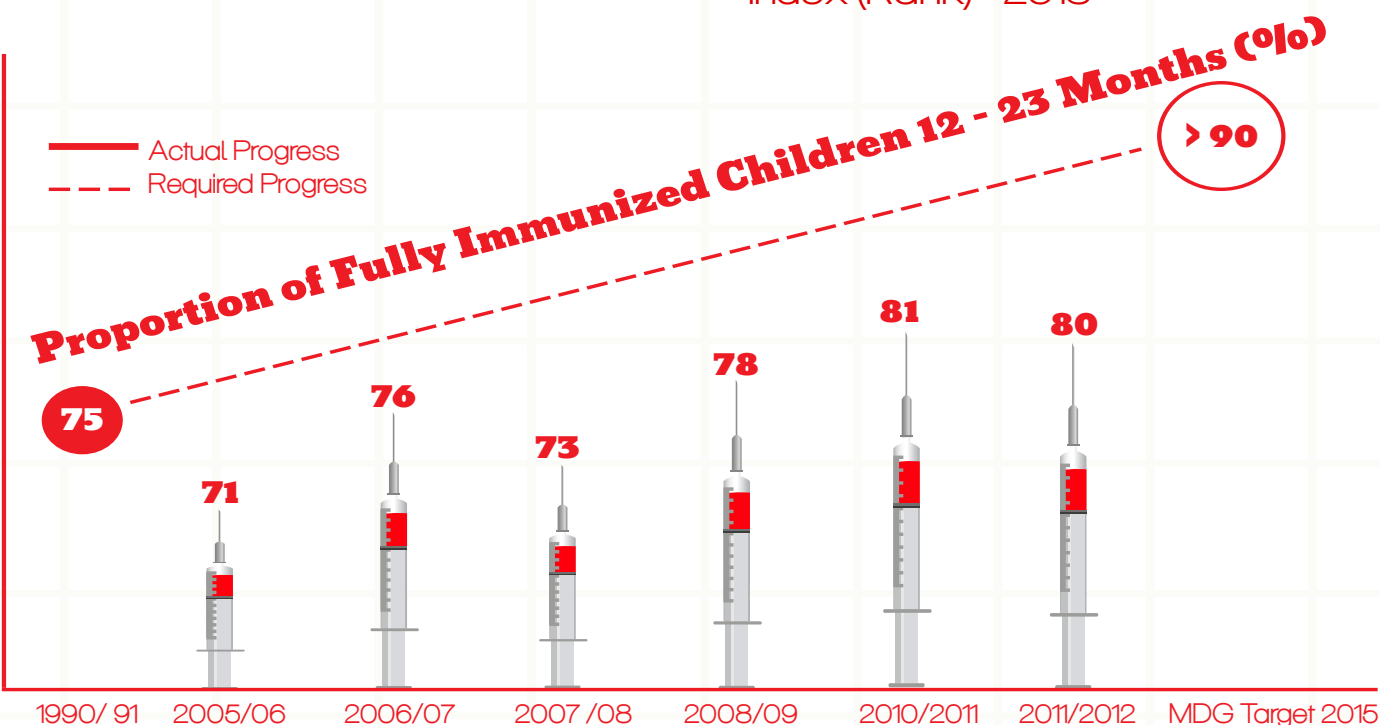
Underweight (%)
2008-2012
(moderate & severe)
31.5

Incidence of Tuberculosis per 100,000 Populations
2010/11 **230**
MDG Target 2015 **45**

Deaths per 1000 Live Births
Under 5 Mortality Rate

1990/1991	117
2006/2007	94
2012/2013	89
MDG Target 2015	52

Proportion of Fully Immunized Children 12 - 23 Months (%)

— Actual Progress
- - - Required Progress

> 90

Year	Value
1990/ 91	75
2005/06	71
2006/07	76
2007 /08	73
2008/09	78
2010/2011	81
2011/2012	80
MDG Target 2015	

Number of Reported Cases Meales
2010 - 4 , 321 cases
2011 - 4 , 386 cases
2012 - 8 , 046 cases

Health Expenditure
Total (% of GDP)
2010 - 2 . 99%
2011 - 3 . 01 %
2012 - 3 . 15 %

Number of Reported Cases Polio
2011 - 198
2012 - 58
2013 - 93

Primary health care centres and units (per 10,000 population) 2013
1.0

Percentage of Population in Malaria Risk Areas Using Effective Prevention and Treatment Measures

— Actual Progress
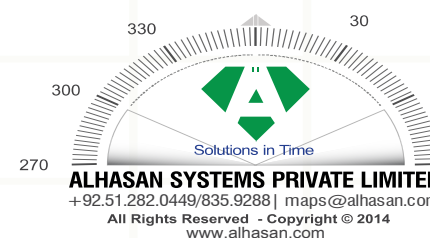- - - Required Progress

75
MDG Target 2015

Year	Value
2001/02	20
2004/05	30
2005 /06	25
2006 /07	25
2007/08	30
2008/09	30
2009/10	35
2010/ 11	40

3.6%
Gross Domestic Product Growth (2013)

Maternal Mortality Ratio
Number of deaths occurring in every 100,000 women during childbirth or pregnancy, for a given year

Year	Value
1990/ 91	533
2001/02	350
2004/05	400
2005 /06	380
2006/07	276
MDG Target 2015	140

— Actual Progress
- - - Required Progress
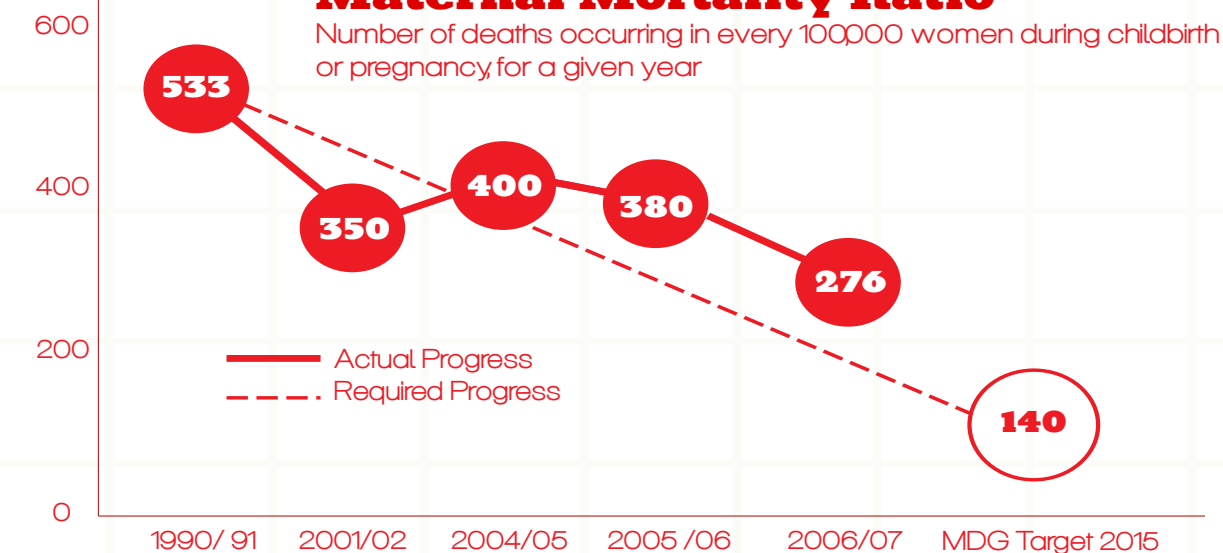
Source :   1. UNDP - Pakistan MDG Report 2013   2 . World Health Organization (WHO)   3 . Polioeradication.org   4 UNICEF - Pakistan

Polio certificate compulsory for Pakistani travelers abroad

ISLAMABAD: All international travelers from Pakistan will be required to carry a valid polio vaccination certificate starting June 1, 2014, according to a joint statement released on Tuesday by the Ministry of Health Services and the World Health Organization.

To control the transmission of the polio virus across the globe, the World Health Organization's International Health Regulatory

Emergency Committee had recommended pre-travel condition on Pakistani travelers earlier in May.

Pakistani travelers can get vaccinated against polio from major public hospitals at the city, district, and provincial level well as from DHO offices, airports, seaports, cross-border check point of neighboring countries.

The polio certificate has to be signed by any designated senior official (BPS-19) at these hospitals, airports and departments.

The polio vaccination will be valid for one year and can be issued to anyone.

In case of urgency, travelers can get the vaccination at the airport or four weeks before the actual date of travel.

First healthy city in Kuwait

Kuwait Capital City: By meeting the requirements of World Health Organization (WHO) Yarmouk a suburb of the Kuwait Capital City has become the first model healthy city in Kuwait. According to the representative of the Yarmouk Council, "The Yarmouk suburb council has already met WHO requirements, including the fight against obesity, a walk marathon, beautification and cleaning,"

The suburb council has set up a well-equipped walking track, planted trees, saved power and water, washed streets with water and soap, organized exhibitions for young entrepreneurs and established an environment-friendly park, he boasted.

It has also organized cultural, social, educational and health symposiums and lectures and paid much heed to voluntary activities by means of setting up working teams, urging people to donate blood, planting trees in main streets, combating smoking and fighting swine flu.

Furthermore, a project to plant a million trees at schools was launched in April 2012 and several campaigns on disabilities and accidents were carried out.

The Health Ministry's chief health controller Dr. Amal Al-Yahya said the ministry attaches much attention to public health and usually adopts initiatives to improve the health sector in the country.

Agreement signed in the field of genetics

Dubai: The Dubai Health Authority (DHA) signed an agreement in genetic education with Imagine, the Institute of Genetic Diseases in France to enable the exchange of research and information for the improvement of genetic health in UAE.

Engineer Eisa Al Maidour, Director-General of DHA and Professor Guillaume Huart, Secretary-General of Imagine signed the agreement.

"Genetics is an important field of health care and this agreement facilitates the exchange of faculty and visiting scholars to participate in teaching research and service programmes as we believe continuous medical education in this field is important to advance prevention, treatment and early detection of genetic disorders," said Al Maidour. The two sides will also promote the advancement of science, technology and human learning through the undertaking of cooperative research on topics of mutual interest and expertise.

Kuwait, Saudi Arabia: Health Travel Insurance for all Visitors?

Both Kuwait and Saudi Arabia are seriously considering making health insurance compulsory for all visitors.

Saudi Arabia has decided to implement mandatory health insurance that must include cover for medical assistance and evacuation in emergencies for foreigners intending to visit the Kingdom. Hajj and Umrah pilgrims are exempted from this requirement.

The Council of Cooperative Health Insurance has yet to confirm the date from which the new requirement apply. It is also not yet confirmed whether insurance can be arranged by any travel or health insurer in the country the visitor is travelling from, or whether it has to be arranged by a health or travel insurer licensed within Saudi Arabia. Once the new rule is implemented, only those foreign visitors who have taken out proper health insurance policies will be eligible to apply for visit visas in Saudi diplomatic missions abroad.

While making travel insurance compulsory for all visitors may seem easy in theory, in practice it is far from the case and any country has to balance whether the money it saves on healthcare, is worth the money lost from reductions in visitor numbers.

Visitors to Kuwait could soon be forced to buy health insurance for the duration of their stay after the Kuwaiti parliament's legislative committee accepted the proposal put forward by MP Khalil Al Saleh that also stated visitors could only be treated in private hospitals.

Access to health services is controversial in Kuwait, where two-thirds of the population are expatriates and the country has not built a new hospital for some time. The health ministry intends to build nine new hospitals, although it made a similar pledge more than a decade ago which has not been fulfilled. Last year, it segregated access to hospitals, banning expatriates from attending public facilities in the morning, except in an emergency. Kuwait provides free medical services to all citizens, while expatriates pay an annual health insurance fee of $175 plus partially subsidized charges for certain procedures.
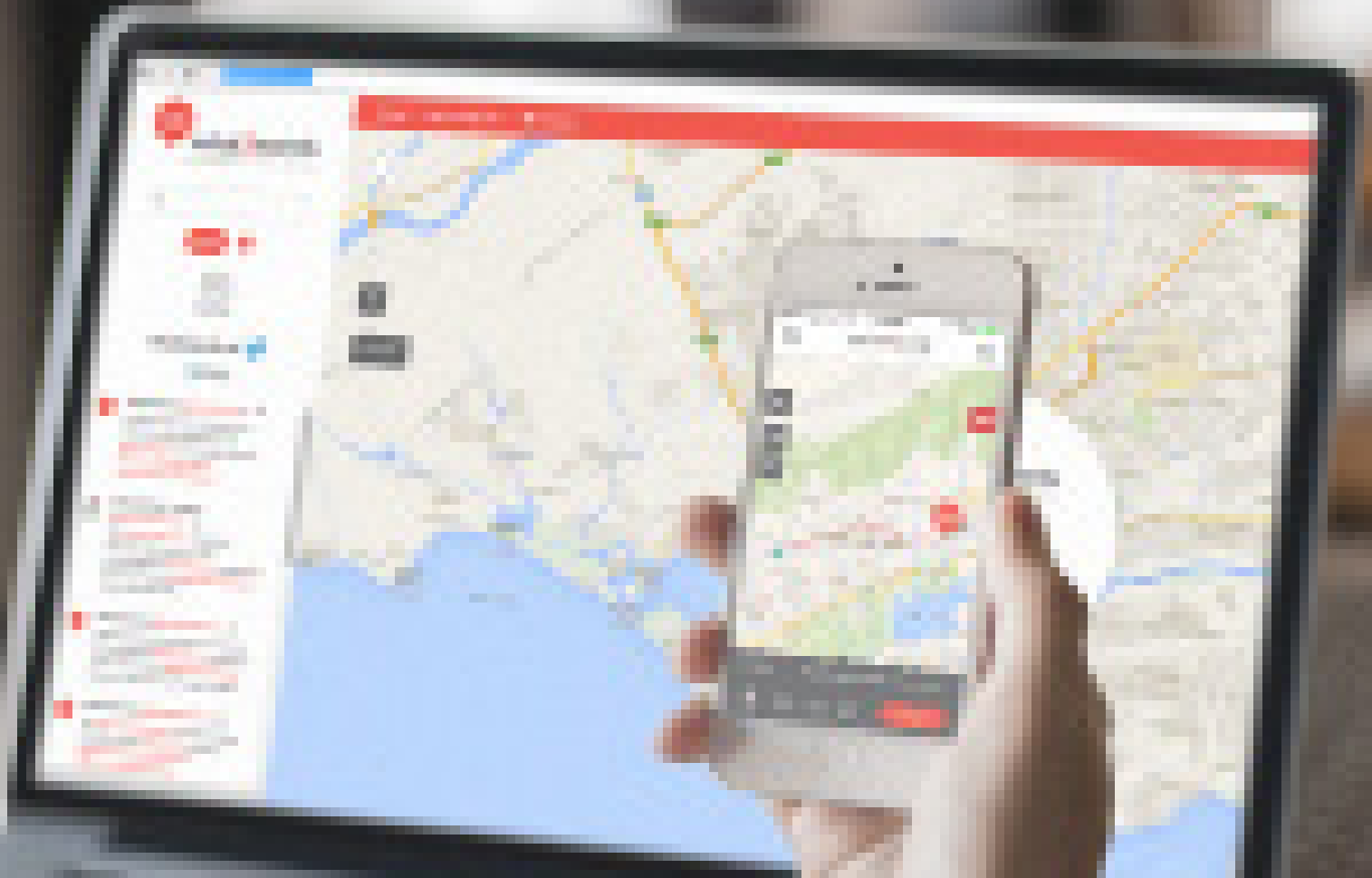
What3Words

**By: Chris Sheldrick
(CEO what3words)**

I've had constant cause for frustration, both in my work and everyday life, with the two main systems for describing locations: postal addresses and GPS coordinates. Last year I set about working through the flaws in both, to see if it was possible to design a new system better suited to present-day needs.

When I ran a farm estate, it quickly became apparent that the farm's postal address was of little use when explaining to sewage contractors where their access manhole covers were located, or engaging our insurer in a phone discussion about a particular corner of a remote farm building.

I would typically resort to an explanation along the lines of "where the postcode takes you, a bit up from there and just to the left". Scanning and emailing maps might sometimes have helped, but this is often very impractical, particularly when the "I'm lost" call from the contractor comes when I am nowhere near a suitable map or computer.

I've also been involved in the event production industry where it's standard practice to employ a dedicated person to handle site contractors when they call to ask where actually to go having arrived "at the postcode"; the industry takes these inefficiencies for granted even though the delays caused are often costly. Most people
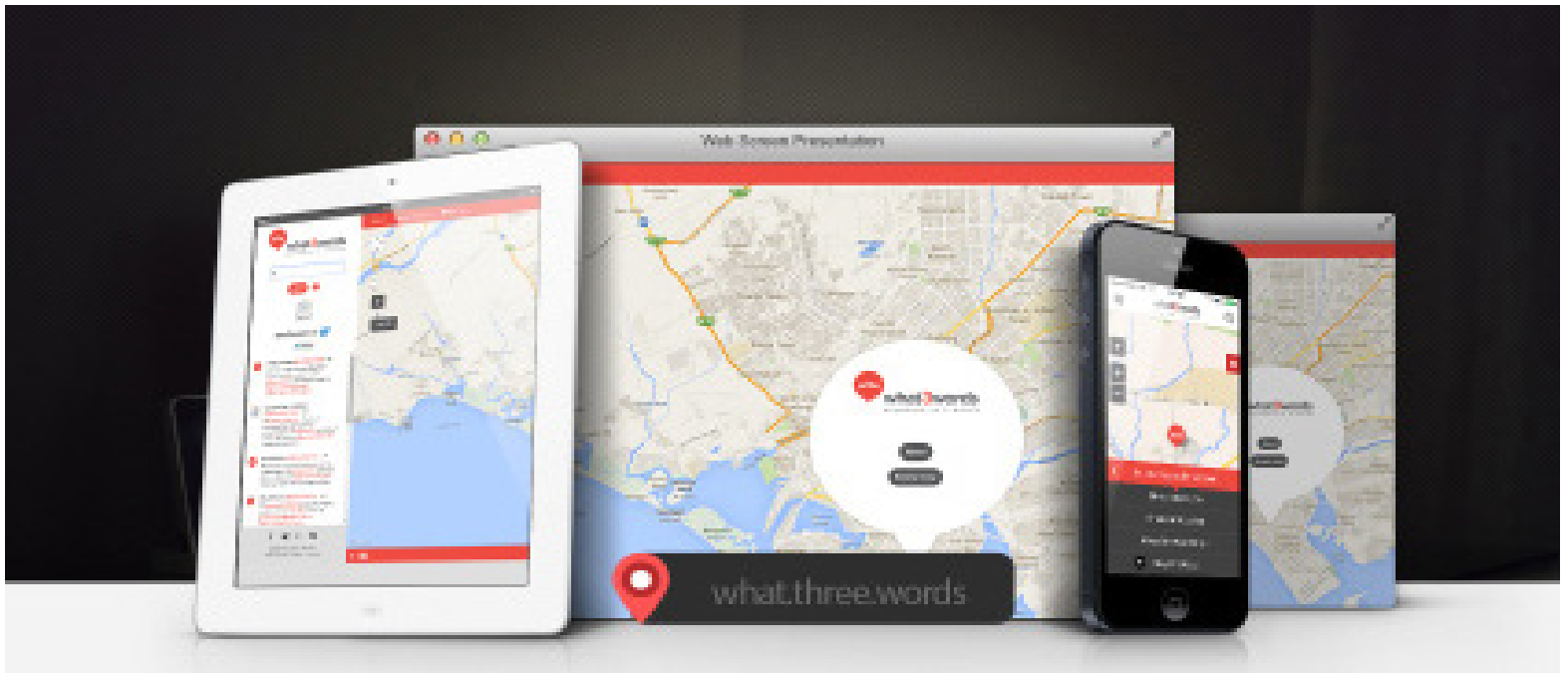
can remember a recent occasion when a postal address hasn't been good enough for their needs, and in 2014 people expect technology to be good enough. It's just that the technology is already good enough, and improving fast. Device geo-location is staggeringly accurate to just a few metres, handsets are able to seamlessly talk to each other in the fraction of a second, conveying location data back and forth without error.

The problem lies with us, the human user, trying to tell a device which specific location we are talking about – or harder still

trying to convey to a colleague or friend the information that they need to put into their device.

Consider the example of a farm with its buildings spread over several hundred acres of land joined by tracks and unnamed roads. A single postal address can refer to the entire property, and provides no opportunity for further precision. You can be almost positive that by entering that postal address into a device you will nearly never end up where you want to be, but instead standing aimlessly on a secluded cattle grid that happens to be near the centre of the postcode. If you have buildings A and B at opposite ends of the farm boundaries, there surely must be a way of referring to their unique locations once the postal address has done all it can; of course there is – GPS co-ordinates, but in practice GPS co-ordinates aren't used for human beings to communicate location with each other. It's simply not practical for 52.083230, 0.063753 to be said over the phone, written down on a notepad, dropped quickly into an SMS or for either the sender or recipient to memorise and recall in the future. GPS co-ordinates are great for devices which don't have these human concerns, but for us, it's an impractical form of communication. If you've ever tried to communicate GPS co-ordinates you will know it takes a significant feat concentration even to transfer them from a piece of paper to an email; if you get two digits the wrong way around, you'll likely be close enough to not know you're wrong, but far enough away to be frustratingly wrong. If your location communication requires accuracy, your method can't be defeated by

Chinese whispers.

What3words (w3w) was born out of these frustrations, and is designed to have the accuracy of GPS co-ordinates, to be practical, shareable and memorable, and to provide verification to counter any human error.

w3w is a grid of the world made up of nearly 57 trillion 3m x 3m squares. Each square has its own unique identifier of 3 words from the English language (e.g. furniture.minder.judge). Using w3w, an instruction to meet at Building B, Manor Farm, Fowlmere SG8 7SJ or 52.083230,0.063753 is now an instruction to meet at furniture.minder.judge which is infinitely simpler. If you want to send a weblink for the meeting it becomes w3w.cm/furniture.minder.judge instead of map.co/X1t6h3P.

If we move away from the farm environment, each 3m x 3m square of every driveway (e.g. outlooks.risking.stuns), corner of the park (e.g. rails.fund.spike), part of the beach (e.g. typing.suspicions.gnome), bit of polar ice (e.g. stipulates.vexing.chocolates) all have their own w3w address – there is no 3m x 3m square in the world left unaddressed.

To counter the issue of confusing GPS digits, all similar sounding w3w addresses are purposefully placed hundreds of miles apart; for instance knife.fork.spoon is a 3m x 3m square in Watford, but knife.fork.spoons is a 3m x 3m square in Barabinsk, Russia – if you've got it wrong you'll be sure you've
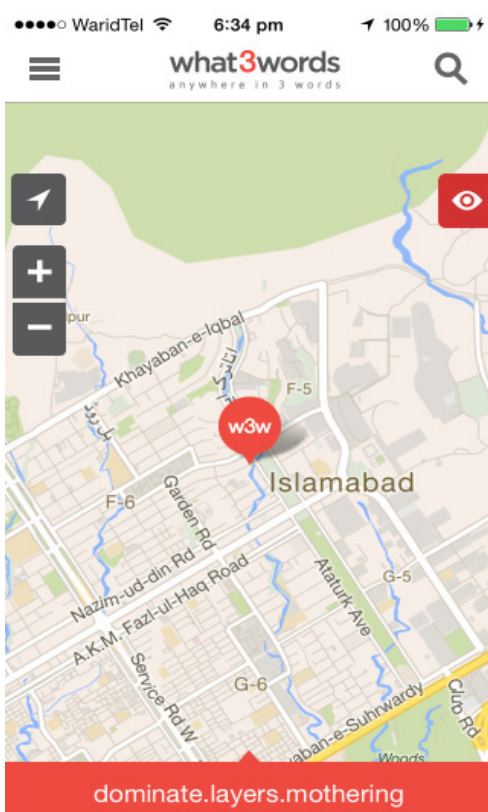
got it wrong long before you even start your journey.

There are plenty of use cases for w3w in rural UK, but the less developed a country's present address system, the stronger case there is for an address system such as w3w to become part of the standard address syntax in that country.

In Ireland, one by-product of the lack of postcodes in the country has led to the common practice of including GPS co-ordinates on hotel websites as well as the postal address. Ireland has planned a national postcode launch for 2015 but it remains to be seen if the proposed new system has the same memorability and communication issues of GPS when tested by the communication challenges of everyday life.

In Dubai, the country suffers greatly with the problem of poor address infrastructure in addition to the lack of postcodes. The government is currently rolling out a 10 digit code for the entrance of every building, but it will be interesting to see if this custom GPS-like system (in appearance, at least) will catch on.

In much of sub-Saharan Africa, the entire culture of communicating addresses is very different to the practices of the developed world; communicating an address is often done by a series of directions by landmarks rather than the use of a centralised address system. w3w presents a compelling case for adoption in countries where postal addresses as we know them are non-existent or cover only a fraction of the country; each of those countries already have a unique w3w address for every 3m x 3m square, there is no database work required to build and maintain an expensive new government-funded system and w3w communication is simple and easy to learn. This could overcome many problems caused by these weak address infrastructures; banks charge higher interest rates on loans as the address of their customers is often unknown or unreliable, governments don't know where their schools are, schools don't know where their pupils live, businesses don't know where their vehicles and assets are. There is a strong argument to suggest that w3w's ready-made address system generated through algorithm and not a costly database could solve a lot of these problems if widely adopted.

Closer to home, w3w could well have a major business case in the UK. Could insurers carry out better risk profiles if they more accurately understood exactly where assets were located? Could emergency service response times be improved in rural areas if there was a simpler way of accurate location communication over the phone? Would there be a saving to the courier industry if they had more accurate location data? Certainly helicopter pilots are incredibly vocal about w3w's benefits over GPS, with w3w's communication benefits meaning pilots no longer have to hover over inhospitable fields which contain no designated landing area, whilst they try to work out exactly which two co-ordinates were mixed up in transmission. With a fully operational website (responsively designed to all device types), iOS & Android apps, and developer API for easy integration with third parties (for automated conversion between 3 word addresses and GPS co-ordinates), w3w offer easy universal access to its flagship 3 word product, but it is worth noting its paid service - the OneWord. For a tiny annual subscription, any user can purchase a customised single word preceded by an asterisk (eg *touchtennis) as an additional label for any 3m x 3m square. The 3 word address never changes or gets replaced by a OneWord, but OneWords can be affixed to any square the purchaser chooses, and then moved to other squares as they choose.
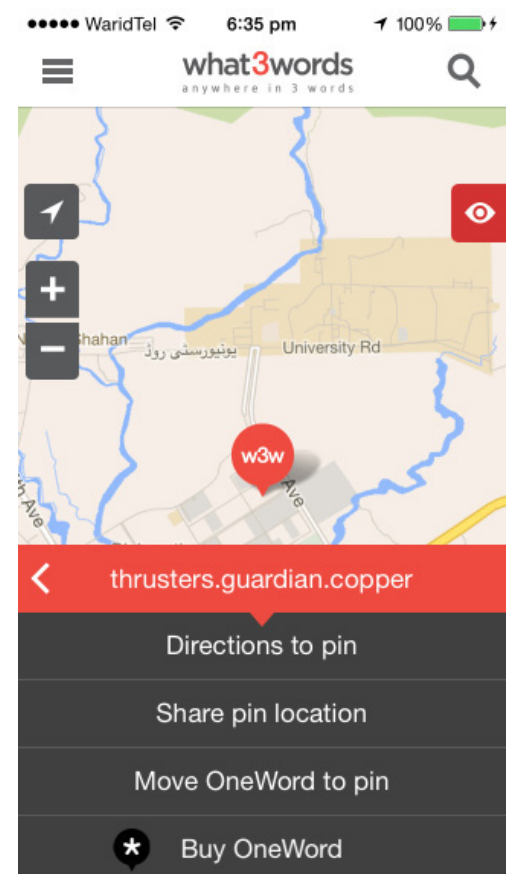
w3w has attracted serious interest from a range of industries in the UK and abroad; in a market where postal addresses and GPS have dominated for decades, this significant new system has been met with excitement and intrigue. It will be tremendously exciting to find out whether specifying that someone or something is located at visual.leaves.crazy is useful and valuable as well as novel (and addictive). ∎

GIS – The Future of a United Middle East?

By: Steve Eggleston

Could GIS be the future of a united Middle East? Yes, from a technological perspective, it could unite infrastructure planning and Implementation.

What is GIS? GIS stands for Geographical Information System. Simply put, it's a computer system designed to capture, store, manipulate, analyze, manage, and present all types of geographical data. It has particular application to infrastructure.

For decades, Middle East infrastructure projects have been plagued with the age-old curses of miscommunication, bureaucratic waste and inefficiency. Common infrastructure includes such things as construction and maintenance of roads and highways, waste and water disposal, and public buildings like mosques, schools, hospitals, health centers, and parks.

In the absence of GIS integration, infrastructure projects are easily proposed, funded and implemented without regard to the details of other projects. A road that is resurfaced one week, may be torn up to accommodate another project the next week. Disruption to local businesses, interruption of smooth traffic flow, and duplication of construction expenses, there after follows, with significant consequent inefficiencies. GIS is no longer a niche

technology as it once was. Now it is an essential tool in the arsenal of government and corporate information management.

About 15 years ago, the State of Qatar, a Middle East country on the Persian Gulf, took steps toward remedying these problems. Qatar adopted a countrywide GIS based on Esri's ArcGIS protocol. Esri is a global supplier of GIS software, web and geodatabase management applications. Its headquarters is in Redlands, California, from which it commands a substantial share of the global GIS software market.

Qatar's first step was to reform the country's historic paper-based budget process that often led to delays and errors.

Endemic to bureaucracy everywhere, many paper submissions were incomplete, late or misplaced. This led to protracted meetings between the various ministries and Ashghal, Qatar's Public Works Authority, thereby complicating the process and precluding opportunities to collaborate.

To automate this antiquated process, Ashghal's Engineering Business Services Department defined a new budgetary protocol called "Moazanah" (Arabic for "budget"), then took proposals. Moazanah's goal was to streamline the process, ensure that all funding applications went smoothly, and provide much needed clarity for agency and individual participants. Ultimately the contract was awarded to an Esri partner,

Rolta Middle East.

At first blush, geo-referencing through GIS might not seem like a core component to improving the budget and proposal review process for country infrastructure, as the process is a mix of cost estimates, construction details and legal nuances – none an obvious fit for GIS. However, as it turns out, GIS is core to the new Moazanah protocol.

Here is why. Each new project has geographic boundaries that can be inputted to a digital map, then referenced and highlighted with key details. Multiple projects can then be tracked simultaneously, with reference to each other. When two or more projects overlap, the Department can coordinate them, avoid duplication and inefficiencies, and create an opportunity to streamline efforts and expenses on multiple levels.

Moazanah makes effective use of Rolta's OnPoint, a web-based GIS APP, SharePoint Web Parts, and the Microsoft SQL Server. Ezri's ArcGIS for Server then manages the spatial data for subsequent analysis, integration and distribution. Once a budget is approved, Moazanah employs the integrated Primavera Project Portfolio Management (PPM) tool to coordinate multiple projects.

"We recognized early on that Ashghal had very ambitious plans for this system," says Shafik Jiwani, EVP of Global Business

Development at Rolta. "With over 23 agencies involved in the process, hundreds of users, and hundreds of projects filled with numerous details, it was quite a challenge to present it all in a way that felt intuitive to the user. As tempting as it was to build a sophisticated interface with lots of complex tools, the smart approach was to keep the interface clean and simple. It had to be easy to find needed information to make informed assessments and immediate decisions."

GIS is by no means new to the Middle East. It has early roots going back to 1975, when the Royal Jordanian Geographic Center was created. Then in 1982, the city of Baghdad formulated its Capital Area Development Information System. Under CADIS, technicians created a base map and then inventoried all of the city's utilities. Even back then, Esri technology was employed to digitize those maps, and in 1986, an official, GIS Department was formed.

In the early 1980's, Kuwait City started a municipal digital mapping process which now exists as an informational portal. By the mid-1980's, Jordan's Department of Land and Surveys began using computer-based methods in map production. In 1986, Cairo initiated its first GIS project, for production of a digital base map application. As the decade closed, in 1989 the Survey of Israel commenced construction of a comprehensive GIS that's now moving toward 3D Cadastre system. (Cadastre is a combined feature that includes the natural entity, person and party, as well as government and its authorization).

In 1990, GIS Awareness in Lebanon took form. Since then, GIS has been used to map the war damages and track changes. In 1992, Qatar won the "Exemplary Systems in Government Award" from the Urban and Regional Information Systems Association (URISA) in the corporate systems category, and continues to excel. In 1997, the Egyptian Cabinet Information & Decision Support Centre, Socio-Economic Indicator, won the NSDI/Data Partnership Systems Award for their City District Housing License and Tax Collection Information System. In 2006, the United Arab Emirates initiated a National GIS protocol, and in that same year, Abu-Dhabi SDI was born.

Qatar's Esri System is simple to use, thus creating a model for other Middle Eastern counties to follow should they be so inclined. The system uses interconnected SharePoint forms that are particular to the

role of the individual logging in. Because simplicity was paramount to Moazanah's success, the user interface was purposely designed to be clean and intuitive.

Under the simple system, key performance indicators are mined from the data and presented on a dashboard that's tailored to a department head's particular interests and responsibilities. To assess a proposed project's suitability and impact on its specified location, Moazanah is used throughout the project assessment process.

During this process, various location-based government regulations, such as zoning, must be considered. GIS is also used to engage other geospatial-based analyses, such as the number of project applications presented within a specific municipality, as well as the status of submitted projects.

In addition to simplicity, Qatar's new system increases efficiency and facilitates collaboration among all the agencies, companies, and individual technicians interested in each project. What once took days and weeks to comprehend, might now take only hours. Further, by Moazanah permitting information to be submitted and reviewed digitally, all stakeholders can consider and discuss the same information as it proceeds through the review procedures, fostering efficient collaboration and coordination. At the stroke of a keyboard, Qatar now has an immediate status report for all proposed projects in the country.

"Moazanah provides us with a forum to discuss and analyze the country's infrastructure project proposals so that we can confidently move forward with them, knowing they are properly managed and

within budget," said Abdussamad Mohamed Al Makei, Ashghal's Manager of the Engineering Business Services Department. That's the good news, and it portends great positivity for the sharing and coordination of information throughout the Middle East, especially for projects impacting the borders of two or more countries.

Of course, despite these great advances, a host of technical issues still present themselves.

For most of the Middle East, the primary technical issues are data acquisition, data quality, needed standardization, data sharing, and data integration. Though technology has fixed most of integration problems, governmental agencies seem stymied by a fear of failure that stops most of them from moving ahead with new integration systems.
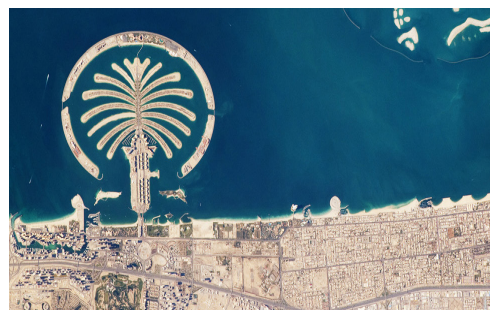
In addition to the technical issues, challenging human issues must be solved. Inter-agency and inter-governmental coordination, cooperation, and communication often plague the process. Low levels of national IT use and public awareness of spatial information must be improved. Methods and campaigns for public awareness and better financial support should be adopted. And of course, developing technologies must be

openly embraced in order for successful implementation of a comprehensive Spatial System to occur.

Increasing public awareness of GIS through seminars in schools and universities, educating the general population of the impact of spatial information on their lives, and seeking financial support from the highest levels of government – all will help the Middle East move toward the efficiencies of special technology unification, including a National Spatial System and National Standards for GIS implementation.

Recognizing that GIS can be a unifying force, an international conference, "GIS for the United Nations and the International Community," organized by Esri, International Telecommunication Union (ITU), United Nations Institute for Training and Research (UNITAR), and United Nations Operational Satellite Applications Programme (UNOSAT), took place April 7, 2014, in Geneva at the International Telecommunication Union (ITU), Place des Nations.

We owe it to ourselves, our fellow citizens and our families to adopt this spirit throughout the Middle East. Spatial Data

Infrastructure is a driving force for economic and social development, and while the whole world is going towards a global spatial information society, it is essential for Middle East countries to build their own information society and SDI initiatives. ∎

UAE Ranked Higher in the Networking Regime

Karachi: The Global Information Technology Report (GITR) of April 23rd 2014, revealed UAE had moved up in the latest global rankings of information and communication technology competitiveness (ICT) by strengthening its position as one of the most techno-savvy countries in the world.

The GITR, co-published by the World Economic Forum and INSEAD, showed that among the 148 ICT based economies, the UAE is the world's 24th most "networked ready" nation. The country is ranked second in the Middle East, next to Qatar, in the global "Networked Readiness Index", and it is ahead of some European countries, including Italy and France.

The report measures the effectiveness of various markets in accessing the power of information and communication technology to boost economic growth and well-being. In recent years, the country has witnessed a number of ICT investments that have changed the way of life of its people.

The report said, UAE's improvements in its ICT infrastructure, ranked 30th globally. ICT uptake by its residents ranked 29th, and has led to greater economic impact and pushed its overall global ranking higher.

Nearly 9 out of 10 people (85 per cent) in the UAE use the internet and have access to a personal computer at home. Many government services are available online and e-commerce is relatively well established.

The overall technological innovation capacity of the country remains low, ranked 49th in the world, but the report said the country "obtains fairly good economic impacts", thanks to its pro-business environment.

First Ever Satellite Remote Sensing Lab to Monitor Crops in Pakistan

Karachi: The first-ever satellite remote sensing laboratory has been established in Hyderabad, (India) to monitor and forecast agricultural production. This technological resource in the Ag-sector will also help policy makers to measure crop yield. The Crop Reporting Services Centre in Sindh will be able to issue monthly web-based bulletins on crop growth and statistics.

According to official sources within the Sindh Government, the technical staff of the lab was trained by the Pakistan Space and Upper Atmosphere Research Commission (SUPARCO). They also went to the University of Maryland in the United States, to learn crop-reporting enhancement using remote-sensing and Geographic Information Systems (GIS). Three researchers from the fields of agronomy, remote-sensing and GIS are part of the staff as well, our source added.

The lab has been established in coordination with and supported by SUPARCO and the Food and Agriculture Organization.

Apple gets License to operate directly in KSA

A local newspaper Al-Eqtisadiah reported, that, Apple Inc. has been granted a license to operate directly in Saudi Arabia.

Under the license issued by the Saudi Arabian General Investment Authority (SAGIA), a new Apple subsidiary, Saudi Arabia Apple Company, will specialize in the marketing and maintenance of Apple products.

It will also be involved in training and IT development in the Smartphones sectors in Saudi Arabia, the report said.

Arab World to have more than 197million Internet users by 2017

According to the first ever Arab Knowledge Economy Report 2014, World Bank, the European Investment Bank (EIB), and the Islamic Educational, Scientific, and Cultural Organization (ISESCO), the number of Internet users in the Arab World is expected to reach 197 million by 2017. The report focuses on the strengths and weaknesses of the region's economy along with the opportunities and risks associated with it.

The GCC countries have launched their e-Governance programs having realized the importance of knowledge-based economy in the socio-economic growth of a country. While Dubai, on the other hand, have entered into the next phase with the recent launch of Dubai Smart Governance.

The report states that the Arab countries are heading towards knowledge economy by improving their education sector through the adoption of new technologies, investment in the Information and Communications Technology (ICT) infrastructure, and are building firm research And development programs, and improvement in the overall business environment. Dubai is the first city in the region to establish first knowledge clusters, including Dubai Internet City, Dubai Media City and Knowledge Village.

The report will be helpful for policy makers as well as for multinational corporations and businesses operating in the region along with potential investors in achieving outstanding financial growth.

Smart cities require sustainable hi-tech plan

Smart cities are starting to become a reality across the region, including in Dubai, Saudi Arabia and Qatar. These cities can enhance communication, and deliver economic benefits. Navigant Research predicts that the global smart city technology market will grow from $6.1 billion in revenue in 2012 to $20.2bn by 2020.

Leveraging millions of sensors in everyday objects, smart cities generate petabytes of data delivered via networks, with data analyzed by cloud-based Big Data solutions.

Increasingly, smart cities are forging public-private partnerships, with third party organizations delivering benefits such as utilities monitoring in buildings, mobile applications for finding parking spaces and connected healthcare solutions for emergency response.

Reflecting the growth in Big Data, the technology research firm IDC has predicted that the global Big Data technology and services market will grow to $32.4bn by 2017.

Tourism and Technology in the GCC

By: Rabeea Wajeeha

They say time is money, and who doesn't value money? When traveling, time is of the utmost value as people want to maximize their enjoyment with the least amount of frustration. Knowing the shortest route to the places you want to visit, and finding the best restaurants, hotels, etc… close by can be both time saving and economical. Most importantly, it makes the whole traveling experience more pleasurable and stress free, allowing the traveler to focus on savoring the moment. As the advent of and access to technology increases, there are a great number of options that can be utilized by the private and public sector to boost revenue within the tourism industry.

Role of tourism in GCC Economy

As the oil rich, Gulf Cooperation Council (GCC), countries look for ways to diversify their economic portfolio, expanding the international tourism sector is a viable option to consider. The GCC states consisting of Bahrain, Kuwait, Qatar, Oman, Saudi Arabia, and UAE are blessed with picturesque beauty and have vast potential for growth in the travel

and tourism sector. In addition to religious tourism and desert exploration, GCC countries are looking for new ways to attract people from around the world including tourism for leisure, recreation, business, retail shopping and sports.

One visa for GCC

With talks of the European style Schengen visa coming into effect by mid-2014, and discussions of forming a confederation, the possibility of GCC countries becoming an important tourist destination is increasing. The GCC states are aware of the importance of the tourism industry and the role it can play in strengthening the economy, but have so far been unable to come up with a comprehensive strategy to develop the industry.

In 2013, the combined GDP of the GCC states was over US $1.64 trillion, placing it in the top 15 world economies. On average, travel and the tourism industry contributed roughly 6.6 % of the total GDP for the GCC states. That amounts to almost US$ 108.5 billion and resulted in indirect employment of 1.2 million people.

Emerging trends

The two emerging trends expected to have an impact on the GCC tourism industry in the coming years are the increases in China's middle class and India's; and the rise of tourism for majority of baby boomers in Europe and the US who are on the verge

of retirement.

As the market for tourism in the GCC states develops, there is a definite need for a comprehensive tourism strategy in order to gain their full potential. The GCC countries need to capitalize on the sector's advantages and develop strategies to minimize the detractions for the tourism industry.

The GCC states have a comprehensive network of new, modern airports with the capacity to handle large number of travelers and our region is showing rapid growth in the retail tourism industry. United Arab Emirates, Oman, Kuwait and Saudi Arabia are emerging. As major global retail markets, confirming continued strength of the retail sector in the GCC. The Persian Gulf is a cross-road of the world and as a financial hub, we have great appeal as a preferred business tourism destination.

If China and India, and Europe and America come here for business; they can stay for play. The region has pleasant weather for tourists looking to escape the winter blues, and once here, travelers find 5-star hotels and resorts; our beautiful beaches, fishing, diving, our sleek modern luxury and ancient sites.

Role of Information Technology

The main objective for any business is to attract and retain customers. Information Technology (IT) and Geographic Information Systems (GIS) in particular can play an important roles for the tourism

industry.

GIS technologies can be used by the public and private sector to manage, analyze and display large volumes of pertinent information and make well informed decisions. It can also be used in the planning as well as monitoring and evaluation phases. Where should that new hotel go? How much will it cost as opposed to that site – over there? How do we move people to the attractions in a region? How far away is the shopping? The beach? That ancient city?

We all know what the questions are – GIS can provide the answers.

Tourism is heavily dependent on environmental resources and eco-tourism is growing everywhere in our world. People may be arriving in a country for a visit, but they came to see the reefs, go sailing, or explore a city built two thousand years ago. The role of GIS in environmental planning and protection is critical to this rapidly growing industry.

No one will be coming to visit your GIS reports. They will come to experience what you did with it. Whatever your solution, GIS will be central to the decisions you make.

There are a great number of functions provided by the Geographical Information Systems. It can be used for data entry, storage and manipulation and creating tourism resource inventories.

Map production can be used for identifying the most suitable locations for development and strategic planning. Database integration and planning monitors trends over time and measures impact. This is a valuable tool as it can be successfully used for projections based on historical data and trends. Spatial analysis and modeling identifies patterns and examines the relationship between resource use and potential impact of tourism development. This is a valuable tool for decision making

Indicator (2013 % of total)	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	UAE
Direct contribution to GDP	4.1	1.5	3.2	1.8	1.7	4.0
Total contribution to GDP	10.2	3.5	6.4	6.6	4.3	8.4
Total contribution to GDP (US$ in billion)	3.3	6.5	5.4	13.9	31.9	32.0
Direct contribution to Employment	4.1	1.8	3.3	1.7	1.8	5.3
Total contribution to Employment	10.0	4.0	6.4	5.4	4.2	9.1
Indirectly supported jobs (thousand)	74	91	72	86	392	497
Visitor Exports	7.3	0.4	3.1	5.4	2.3	5.8
Visitor Exports US$ billion	1.78	0.52	1.85	8.13	8.77	22.04
Expected to rise by (%) in 2014	7.4	8.9	9.7	8.7	6.1	2.9
Domestic spending	2.4	2.3	2.5	0.9	1.5	2.0
Leisure spending	3.5	1.1	1.9	0.5	1.3	3.1
Business spending	0.6	0.3	1.1	1.2	0.4	0.9
Capital investment	6.8	1.7	3.4	2.5	4.0	6.2
Expected to rise to in 2014 (%)	6.6	17.3	11.7	16.9	6.7	9.7
Investment (US$ billion)	0.41	0.59	0.66	1.71	5	5.71
Population (thousand)	1236	2947	2948	2111	29,000	9123
GDP in 2013 (billion)	32.1	185.78	84.52	210.91	747.82	382.76
Visitors in 2013 (million)	7	4	1.6	1.3	15.7	11.3

http://www.arabnews.com/news/495656 | http://wttc.org/

as it creates a picture and allows for manipulation of variables to help understand and simplify the information you are looking at.

Studies indicate that, as of May 2013, some 56% of the world population owns a Smartphone and these numbers are expected to grow. "Nearly two-thirds (65%) of Internet users globally go online via mobile phones, and 29% do so on tablets. Smartphone Web users increased 19% last year to 994 million, while those using tablets grew even faster—up 45% to 450 million." As the number of customers with access to technology grows, it becomes easier to harness the power of that technology to increase the business possibilities and especially to enhance the tourism industry. There are many ways that technology can be used by the public and private sector. Personalized tour guide applications can be linked to a central city or regional database, allowing users to have the most accurate and customized information at their fingertips. Augmented reality applications can be used to access cultural and historical information about the places of interest. Most importantly, tourists can find their way back to hotels or other destinations when they get lost. It's even better if they don't get lost, but of course – they will.

Along more serious lines, accidents happen and unexpected medical situation occur. It's not nice, but it does happen.

Tourists can be provided public health and other emergency information when necessary and it can happen in their own language – a blessing when dealing with tourists from across the world.

Medical records can be accessed in host countries and emergency contacts made at home Medical tourism can benefit tremendously from the ready access to information. It can be linked to the medical institutions and provide relevant information needed to make important decisions.

Mobile health applications can also be used to monitor heart rates, blood pressure and reduce stress levels while traveling. Travelers can keep their medical records and other important information with them for ease of access.
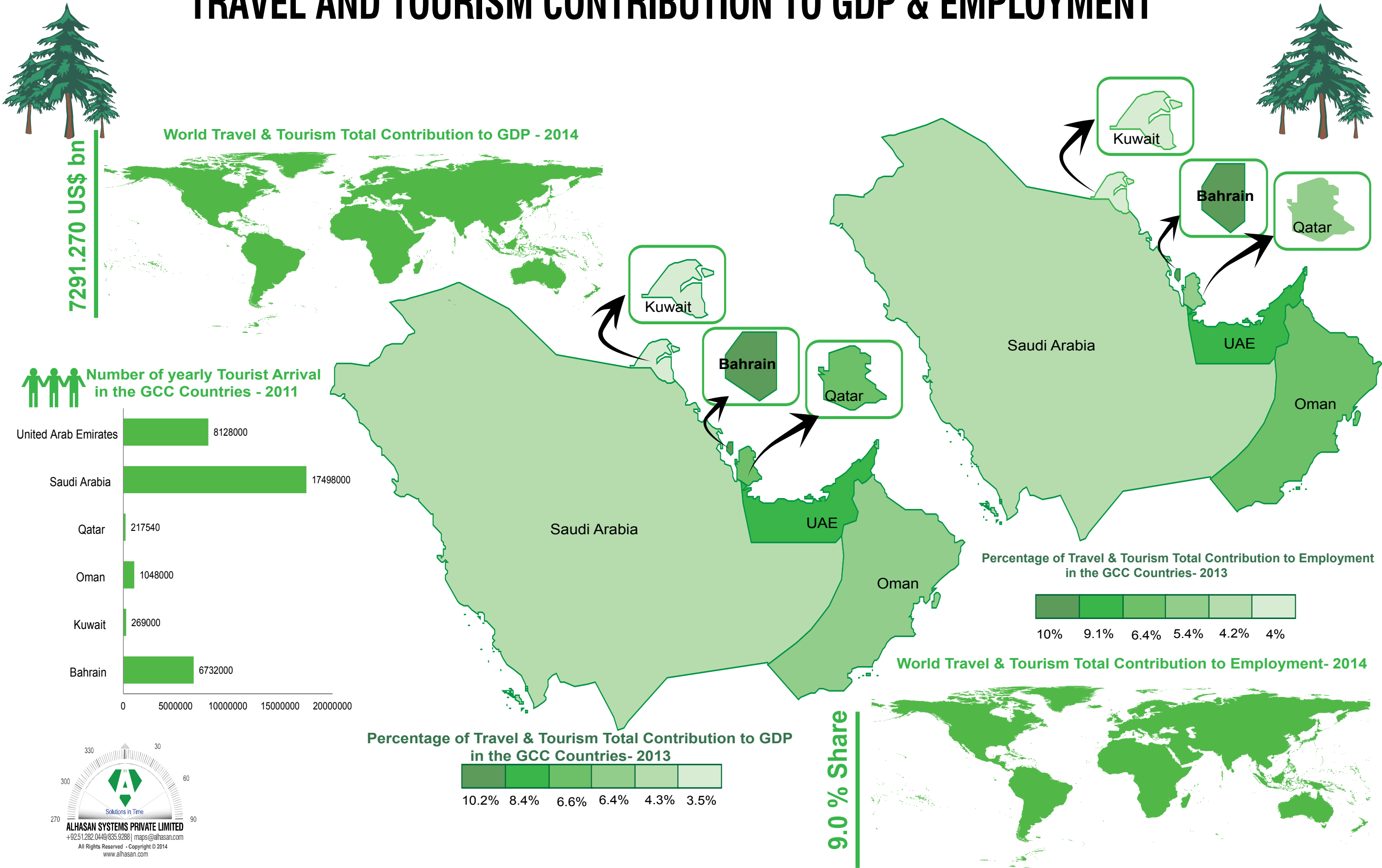
Travelers can use technology to communicate in the local language and understand the local culture better. Religious tourists are already taking advantage of technology to prepare for Hajj and Ummrah as well as getting the necessary information while visiting and getting around. Cloud computing technologies are tools for business professionals, allowing them to strike a work-life balance by allowing access to all the information they can get at home. They can use technology to stay in touch with family

while they are away, alleviating home sickness and reducing worry and stress.

It's evident that there are many technologies that can be used in the travel and tourism industry, it is about time that the GCC countries take on the challenge of using technology and come up with a solid strategy to diversify and create economic growth. ∎

TRAVEL AND TOURISM CONTRIBUTION TO GDP & EMPLOYMENT

World Travel & Tourism Total Contribution to GDP - 2014

7291.270 US$ bn

Number of yearly Tourist Arrival in the GCC Countries - 2011

United Arab Emirates	8128000
Saudi Arabia	17498000
Qatar	217540
Oman	1048000
Kuwait	269000
Bahrain	6732000

(axis: 0, 5000000, 10000000, 15000000, 20000000)

ALHASAN SYSTEMS PRIVATE LIMITED
+92.51.282.0449/835.9288 | maps@alhasan.com
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330 30
300 60
270 90
Solutions in Time

Kuwait
Bahrain
Qatar
Saudi Arabia
UAE
Oman

Kuwait
Bahrain
Qatar
Saudi Arabia
UAE
Oman

Percentage of Travel & Tourism Total Contribution to Employment in the GCC Countries- 2013

10%   9.1%   6.4%   5.4%   4.2%   4%

World Travel & Tourism Total Contribution to Employment- 2014

9.0 % Share

Percentage of Travel & Tourism Total Contribution to GDP in the GCC Countries- 2013

10.2%   8.4%   6.6%   6.4%   4.3%   3.5%

European Tourist visits Iran up 240%

Tehran - Iranian Cultural Heritage, Handicrafts, and Tourism Organization Director Masoud Soltanifar said that, the entry of European tourists to Iran has risen 240% between April 9 and May 10 compared to the same period last year.

According to IRNA (Iran's official news agency), most of the 4 and 5 star hotels in the cities of Isfahan, Shiraz, Yazd, and Kashan have been fully reserved by European tourists for the next six months. The Financial Times report published in January said that Iran may be set to return to the top of "must-visit" lists for 2014.

Now, tour operators are hoping the thawing of political relations with the west following the election of Hassan Rouhani as president will give travelers the reassurance they need to return.

Rouhani's administration has announced plans to ease visa requirements to increase visitor numbers and increase annual income from tourism from $2 billion today to $10 billion.

On Thursday, May 15, Iranian Intelligence Minister Hojjatoleslam Seyyed Mahmoud Alavi said that development of the tourism industry should be taken seriously, since it can be one of the cornerstones of the "resistance economy" proposed by the Supreme Leader.

"Our view and the direction in the Ministry of Intelligence is to remove problems and hurdles for the promotion of tourism," he added.

Dubai tops in hotels and shopping ranking

According to a web based survey, by TripAdvisor, Dubai secured the top position in hotels and shopping.

Dubai stood ahead of Cancun and Bangkok in the best hotels category and ahead of New York and London for shopping in TripAdvisor's recently published Second Annual Cities Survey.

The survey results are based on more than 54,000 responses from those who had recently written reviews for featured cities on the TripAdvisor website.

Dubai Mall, world's largest shopping center, attracted 75 million visitors in 2013. Dubai is also home to some of the most luxurious hotels including The Atlantis and the Burj Al Arab. In 2013, more than 11 million visitors checked into hotels in the emirate.

TripAdvisor describes Dubai as "a cosmopolitan oasis, a futuristic cityscape that towers over the Arabian Desert." Last week, Dubai ranked 16th in PwC's Cities of Opportunity study that measured the economy and culture of 30 urban cities. The lowest ranking for overall experience was taken out by Mumbai, followed by Punta Cana and Moscow.

Dubai was the lowest ranked city for culture. The top three cities for culture were Rome, Vienna and Paris. In last week's Cities of Opportunity study, Dubai was ranked last for sustainability and the natural environment.

Pakistan to provide services for Expo '20 in UAE

The Prime Minister's Adviser for Foreign Affairs and National Security, Sartaj Aziz, briefed local media that Pakistan's engineers, experts and skilled workers would provide services for setting up the infrastructure of Expo 2020 in United Arab Emirates (UAE).

He told local media that the UAE leadership is serious about engaging Pakistanis for the task.

According to rough estimates, about three hundred thousand skilled personnel would be required for entertainment, construction and other professions by the UAE. Pakistan is happy to provide its personnel to assure success in the UAE.

Mr. Aziz visited the UAE to discuss a whole range of bilateral relations and the regional situation before returning home.

Pakistan holds its relationship with the UAE in high regard. It is deeply rooted in common faith, culture and history. Many Pakistanis working in various fields in the UAE form a strong bond between the two countries.

The government will give selected people training and they would also be taught Arabic language. They will be briefed about cultural aspects of Arab life so that exported manpower to assure success for both nations.

Sartaj Aziz said that a memorandum of understanding (MoU) would be inked between Pakistan and the UAE to cement the agreement.

SCTA develop tourist sites across Saudi Arabia

The Saudi Commission for Tourism and Antiquities (SCTA) in collaboration of various municipalities and governorates throughout the provinces has concluded the implementation of 160 projects for the rehabilitation of a number of tourism sties in the country.

The aim is to provide facilities and services; better road networks, parking lots, footpaths, shaded sitting areas, toilets and sale outlets in those sites.

These projects will boost local economies as well as create job opportunities for local communities. This will be especially true for the youth as tour guides, security guards, artisans and the like. There will be employment peaks during seasonal functions.

SCTA has approved detailed plans to develop 28 tourism destinations and sites that are a priority, in addition to offering several of these sites for tourism investment by the private sector.

Unhappy at work? Change your job while still in it

By: Eleanor Chin

When we are dissatisfied with our jobs, often our first instinct is to say to ourselves, "Get out!" Just as often, the very next thought is, "I can't!" Then we feel stuck, and the emotional downward spiral begins.

For many reasons, it's hard to get out or at least to change jobs quickly enough to bring some relief to our immediate pain. Whether the pain comes from overload, work that seems pointless, a demanding boss, or undesirable co-workers, there is something we can do that is more effective than simply enduring the pain while stewing in resentment. In the short term, we can try re-crafting our job or work environment until we can create a longer-term solution.

In a recent NY Times article, hope researcher Shane Lopez, PhD, talks about Job Crafting, a concept designed by Jane Dutton, Amy Wrzesniewski, and Justin Berg at the University of Michigan. Lopez starts by citing what the research says about four common characteristics of people who love their jobs: 1) They use their strengths every day. 2) They feel that they are in important part of their organization's future. 3) They are surrounded by colleagues who care about their overall well-being. 4) They are excited about the future because of a leader's enthusiasm and vision. Using any of these criteria to make changes in your

job will help you experience some relief from the stresses. You may feel that you are not able to change jobs in the short-term. But changing the way you approach to your current job can change your relationship to it. Here are some examples.

Are you aware of your strengths, and are you using them?

Tip: To find your strengths, make a list of the things that you feel you do well and get energy from doing well. Think about past successes and happy moments of accomplishments at work. What characterized your contributions to those moments: Ideas? Execution? Collaboration? If you can't think of any, ask others. Then ask yourself, how can I apply these strengths with what I currently do?

Knowing your strengths and trying to do more with them in your current work can eventually change the boundaries of your job and help you approach your work differently.

If this seems a bit overwhelming, think about taking small steps. Could you increase the time you spend actively applying your own particular strengths by 30 minutes a week? If you rate your satisfaction with your own performance at 4 out of 10, what could you do to take the rating to 5?

At the IPPA Congress, Fredrike Bannink suggested that a supervisor ask the person being reviewed to tell a story about a sparkling moment at work and to listen carefully for the strengths displayed by the person in the story. The supervisor then talks about the strengths implied by the story, increasing mutual insight into the individual's strengths. Is there someone who could listen to your story of a sparkling moment and reflect your strengths back to you?

How much do you understand about the future of your organization and your place in it?

"A strong narrative that provides a clear, shared vision for the organisation is at the heart of employee engagement. Employees need to understand not only the purpose of the organisation they work for but also how their individual role contributes to that purpose." MacLeod and Clarke in their report to the British government on employee engagement.

Tip: Talk to your manager or a friendly mentor about strategic or future plans for the organization or unit in which you work. Ask them to help you think about how your work contributes to those plans and ways you can increase your contribution. Then set one or two reachable short-term (3-6 month) goals. When you've accomplished those goals, celebrate and do it again. Setting doable goals and reaching them can give you back some of the autonomy and satisfaction you may be lacking.

Are you spending time with the wrong people at work?

Tip: If the people around you are complaining, negativity is contagious and you will catch this common workplace disease. While it may feel good to have others share in your complaints, over time this attitude leaks into everything you encounter.

To cultivate new workplace relationships, make coffee or walking dates daily or weekly with positive people outside of your regular circle. Join a committee trying to make improvements to the workplace or a social group who does activities that you enjoy. Changing the people scenery around you will change the scenery in your head and your attitude. Positivity can also be contagious, as discovered by Fowler and Christakis in their analysis of the Framingham Heart Study:

"People's happiness depends on the happiness of others with whom they are connected. This provides further justification for seeing happiness, like health, as a collective phenomenon."

Is your leader sharing his/her enthusiasm and vision?

Tip: Leaders are people too. They can get overwhelmed and forget that their subordinates need more communication from them. If your leaders are not communicating, make appointments with them to ask about their visions for the future. What are they most excited about? What keeps them up at night? How can you help? You might be surprised that they are surprised to have someone interested in what really matters. Both of you will get something from changing the focus away from the day-to-day minutiae. Asking them how you can help them succeed, and then following through, is a great way to build your professional network.

In summary, these short-term strategies can effectively change your mindset to be more productive and less destructive at work. By taking charge of what you can control, you feel more engaged and autonomous in small ways. This counteracts the feelings we often get that things around us are out of our control and going badly.

Additional benefits from a new mindset are:

1. The job recrafting criteria can increase your self-awareness and help you make better choices for your future.

2. You will be better able to see opportunities for long-term change.

3. Applying these short-term strategies will eventually free up the energy you spend on negativity to focus on the long-term prospects.

4. The people you meet can become part of your professional network. You never know whose advice, recommendation, or help you may need to handle a future job opportunity.

Together, an improved mindset and increased self-awareness, in addition to sustaining your engagement with your current job, can open up visions of a new future by aligning what you do with who you are. ∎

Holistic Living
Kiran Zahra

To eat or not to eat?

When you get up in the morning with just enough time to go for a jog before going to work, there is hardly any time to grab a bite of breakfast. Besides, your aim is to lose some weight and make the most of the calories you just burnt, why then 'waste' the calories having breakfast?

Eating incorrectly may result in ineffective workouts; skipping meals can make you feel giddy and lead you to faint during the workout while overeating afterward might not do you any good

Acknowledgement

By: Kiran Zahra

either. Your body cannot digest a big meal while you are busy exercising, so it is vital to know how much, and what you should eat and when.

Find a healthy balance

A well balanced diet is immensely vital for staying healthy. But it gets even more crucial when you exercise regularly. Chronic diets that limit the intake of certain food groups and fats don't always give your body the fuel it needs to work out well. Your body requires carbohydrates and protein for muscle build up and a little quantity of good fats to have energy to exercise properly.

Try to incorporate a serving of carbohydrates, such as brown rice, whole-wheat pasta, fruits and vegetables for your pre-exercise meal or snack. Also add a moderate amount of lean protein eg cottage cheese, with a few whole-wheat crackers or a small orange with a hardboiled egg.

Please remember foods that are high in fibre and fats take more time to digest and may lead to stomach problem during workout.

Time it right

You don't want to work out on fumes. That's why it is essential to feed on light snacks an hour before you exercise. Always keep some nutritious convenient foods on hand. Breakfast smoothie also makes a quick protein boost and is a great pre-workout snack.

Be wary of meal replacement bars

Most of the power bars are just as good as a candy bar. Look for bars that are low in fats and sugar and have three or four grams of protein and 20 grams of carbohydrates.

Make sure you eat enough

A small amount of snack is enough to boost you up for a 30-minute walk or an aerobic class. If you plan on more intense training or a lengthy workout, add more nutritious foods to your before workout snack to pump up your calorie intake.

Stay hydrated

It is very important to stay well hydrated before, after and most importantly during your workout routine. Drink 18 to 21 ounces of water two hours before you begin to exercise. Then drink 8 to 10 ounces of fluid every 15 to 20 minutes during exercise. Afterwards, drink 18 to 24 ounces of fluid for every pound of body weight lost after the workout.

Replenish yourself afterwards

During a workout routine you use muscle glycogen stores for fuel. Those stores must be replaced for ultimate recovery as well as muscle repair and growth. Having some protein and carbs are the optimal way to do so.

Try to have food within one to two hours of exercise to aid your body recharge. Here are a few foods which strike the right balance of protein and whole-grain carbs:

Whole-wheat roti with black beans, veggies, grilled chicken and feta cheese.

A bowl full of oatmeal, skim milk and banana.

A bowl full of vegetable soup.

Whole wheat pita filled with sliced turkey, hummus, tomato and lettuce. ■

Impacting Sustainable Behaviour and Planning in Smart City

By: Nasrin Khansari, Ali Mostashari and Mo Mansouri

The premise of a smart city is that by having the right information at the right time, citizens, service providers, and city government alike will be able to make better decisions that result in an increased quality of life for urban residents and the overall sustainability of the city (Mostashari et al., 2011a). There is an explicit need to understand the impact of smart cities on urban environmental, social and economic sustainability from a holistic perspective. This paper explores the influence of smart city technologies on urban sustainability. Conceptual systems' diagrams are provided, which map the relationship between smart city and different aspects of sustainability as outlined in the literature, and identify the gaps that will need to be addressed in order to robustly understand the full impact of smart city on urban sustainability.

The paper also discusses the role of the smart city as a way for residents to contribute to the decision-making process, and explores the mechanisms by which information sharing changes the structure of urban governance and citizens' behaviours towards more sustainable behaviours.

Urban Sustainability

In general, "sustainability" refers to a harmonious relationship between human

and environmental systems which ensures that human needs are not only met in the short term, but continue to be met in the long term by conserving and allowing for the regeneration of the natural environment. Although the term of sustainability has different interpretations, it is generally agreed that for human activities to be sustainable, there must be a relatively constant capital stock (Alberti, 1996). In other words, sustainable development should meet the needs of all people across long time periods, including both present and future generations (Keirstead and Leach, 2007; Alberti and Susskind 1996; Curwell and Cooper, 1998). Sustainability is often described as a multi-dimensional concept that is applied not only to the natural environment, but to society and the economy (Walsh, 2011; Cutcher- Gershenfeld et al., 2004). Urban sustainability refers to those aspects that are most prominent in urban interactions and structures. To achieve its goals in areas related to environment, equity and economics requires changes in planning policies, technology and the social behaviour of citizens (Cutcher-Gershenfeld et al., 2004).

Urbanization has increased, particularly in developing countries with an average annual urban growth rate of 3.6% between 1950 and 2005. However, during the same period, industrialized countries experienced an urban growth rate of only 1.4% (Sahely et al., 2005; Aubry et al., 2011). It has been estimated that 45% of the population of developing countries (1.97 billion) and 75% of those in developed countries (945 million) were living in cities in 2000 (Aubry et al., 2011; Mega, 2010). It is expected that by 2025, the urban population will reach 5.5 billion, with an estimated 2.5% annual rate of increase. The urban population in developing countries will reach 4.3 billion; that is, more than three times that of developed countries (projected to be 1.2 billion) (Choguill, 1996).

Finally, Shen has estimated that 70% of the total global population will live in urban areas in 2050 (Shen et al., 2010). Population density directly affects different aspects of sustainability such as environment, urbanization and quality of life (Prado-Lorenzo et al., 2011). In other words, urban population growth impacts the environment and is one of the most important challenges for the management of sustainability (Alberti and Susskind, 1996; Maiello et al., 2011). Urban sustainability is achieved by minimal usage of non- renewable

resources, remaining within the absorptive capacity limits for local and global waste, and meeting basic human needs (Choguill, 1996). Historically, cities have given rise to many societal problems such as large-scale pollution, waste, congestion, poverty and criminality (Rotmans and Asselt, 2011; Jenks et al., 1996). Sustainable cities aim at combating such problems by achieving economic, social, cultural and ecological development (Alberti and Susskind, 1996).

Smart Cities

For many people, city life is more a mixture of alienation, isolation, fear of crime and terrorist attacks, congestion, and pollution than a feeling of community, participation, animation, beauty or pleasure (Komakech, 2005). A transition from the former to the latter may be supported by smart computing: a new generation of integrated hard- ware, software, and network information technology systems with real-time awareness of the surrounding world that can help citizens make more intelligent decisions. Smart computing transforms cities from their traditional forms into smart cities (Nam and Pardo, 2011). Cities require accurate and real-time information about the status of urban services in order to improve public safety and provide adequate infrastructure-based services such as safe drinking water, reliable electricity, and sustainable, safe and reliable transportation and communication.

However, traditional cities cannot optimize this provision of services due to constantly changing conditions. Important officials are not able to access the requisite information for decision- making in the right form, and at the right time (IBM, 2011). In other words, a smart city provides the required infrastructure for citizens and officials to make more intelligent decisions. In doing so, it plays an essential role in dealing with challenges relating to ecological, social, cultural, and economic sustainability (Caragliu et al., 2011). This section looks at various perspectives on the smart city currently existing in the literature.

The utilization of information technology for decision-making by citizens, service providers and city government has given rise to the general notion of a smart city. There are several models for an information-centric city in the literature, which are hierarchically based upon one another. Any information-centric city features three mutually connected dimensions: technology,

human, and institutional. The "technology" dimension includes digital, intelligent, ubiquitous, wired, hybrid, and information elements. On the other hand, creativity is a main driver to smart city. Human dimension factors including people, education, learning, and knowledge, have key roles in smart city. Finally, the role of government, the relationship between government agencies and non-government parties, and their governance are fundamental to the design and implementation of smart city initiatives and are considered as institutional factors of an information-centric city (Nam and Pardo, 2011).

In a smart city, all significant infrastructures - including roads, bridges, tunnels, rail, subways, airports, seaports, communication infrastructure, water, power, and major buildings - are monitored in order to maximize the services available to residents (including security services), while optimizing the use of resources (Hall, 2000).

Smart city architecture includes three layers (Mostashari et al., 2009):

– Human/ Institutional Layer: embraces all residents, non-governmental organizations (NGOs), government regulators, and actors in the private sector involved in the creation of market dynamics. The integration of profit maximization goals into the economic utility function of these social agents determines strategies at the data network and physical network levels.– Data Layer: includes all data gathering devices, information sensors, local wireless and cellular networks that monitor the status of various systems within the city. This layer integrates subsystems to make the overarching system more "smart."

– Physical Layer: consists of all physical objects and infrastructures and their accompanying physical properties, and provides connectivity for the city's subsystems. For instance, wireless sensors can be installed in components of the physical layer in order to collect monitored parameters and transfer this data to the data network layer. Data network agents, in turn, use those sensors/actuators located within the physical system to monitor the performance of city systems and initiate control actions based on the economic optimization scheme utilized within the social network layer.

Impact of the Smart City Paradigm on Urban

Sustainability

To achieve multi-dimensional urban sustainability, both bottom-up citizen behaviour and top-down government decision-making must become more efficient, effective and sustainable (Cutcher-Gersh-enfeld et al., 2004).

It is necessary that officials (who work based on established rules and standards) report and respond with fairness and consistency to the concerns of residents. During this process, all residents, including the poor, should be able to play an essential role in decision-making. Public employees should have access to basic entitlements necessary to make a living. All residents should have access to low-cost, understandable and relevant information, from which effective accountability and clear laws, regulations and policies can be provided (De, 2010). Meanwhile, the interconnected systems of land use, water, energy and transportation systems that comprise the urban infrastructure all affect the decision-making process. Finally, the implementation of socioeconomic and environmental policy affects the decision-making process for sustainable cities (Minne et al., 2011).

A. Sustainable itizen Behaviour

Human behaviours such as over-population and over-consumption may cause major environmental threats, including global warming and ozone layer destruction (Oskamp, 2000; Giord, 1999).

Accordingly, behaviour change is required to achieve the goals of sustainability. In practice, psychologists

can play an essential role in helping citizens to adopt sustainable patterns of living and enhance their contributions to the environmental, economic, and social aspects of sustainability (Oskamp, 2000; McKenzie-Mohr, 2000a; Vlek and Steg, 2007). Since human behaviours are rooted in social situations, institutional contexts and cultural norms (Shove, 2010), individual adaptation and change - as well as personal agency - are also embedded within those socio-structural networks. Social structures shape rules and resources to organize, guide, and regulate human actions.

Human behaviour change is necessary to achieve the goals of sustainable urban development, including political and environmental activities. Actors include officials, inhabitants, non-governmental organizations (NGO), activity groups, religious groups, community-action groups, private sector firms, women, and experts. In other words, the participation of not only government, but all segments of society - including the active participation of citizens - is necessary to achieve sustainable development through decentralization of decision-making and implementation of power (Moon, 2006).

B. Sustainable Planning

New urbanism, smart growth, and the ecological city are three sustainable urban development approaches. Smart growth refers to natural resource protection, regional collaboration, and economic development based on local capacity and resident participation. New urbanism addresses itself more to" architecture of community", that is, it focuses on the structure of places and open spaces to improve the quality of life. In the eco-city, land-use policies reflect the use of renewable energy, diverse transportation options, short travel distances, and urban density (Jepson and Edwards, 2010). For planners, the city should be considered a complex system consisting of both economic and environmental subsystems. Accordingly, planners require tools to manage natural resources, pollution, information, and trade (Campbell, 1996).

In order to achieve urban sustainability, government employs information technologies, including inter- net and mobile computing, to enhance its relation-ship with citizens, businesses, and other govern- mental sectors. This enables the delivery of more services to citizens, improved interactions with businesses, and more efficient governmental management. Other benefits of e-government include less corruption and cost along with greater transparency, convenience, and revenue growth. Meanwhile, citizens themselves are empowered by this improved access to government information and services (Palvia and Sharma, 2007; Yildiz, 2007);

it is important that these citizens be able to participate in decisions regarding energy infra- structures and transportation systems.

Conclusion

Access to the right information at the right time allows citizens, service providers and city government to make better decisions that result in increased quality of life for urban residents and overall sustainability of the city. To achieve multi-dimensional urban sustainability, citizens' behaviour and government decision-making must each become more efficient, effective and "sustainable". Smart cities offer a very promising solution to this need, by helping citizens and officials to develop sustainable behaviours and planning. Smart cities will require innovation when it comes to planning, management and operation of their infrastructures and resources if they are to cope with the future demands of their citizens (Naphade et al., 2011).

Smart cities are thus capable of altering the environmental and social behaviours of citizens, whether this means providing information about mechanisms for reducing energy consumption, or updates on travel routes. In addition, they facilitate smart governance and political participation among citizens and officials through the use of ICTs like e- governance and e-democracy. They impact urban infrastructures such as systems of water and land use, energy, and transportation, encouraging the use of renewable energy sources as a path to sustainable development. Nevertheless, in making use of these technologies, cities must deal with challenges related to privacy, security and government surveillance. In practice, residents will live in a "surveillance society"; that is, where societies are connected but completely unknown to one another (Alusi et al., 2011). Yet another challenge facing smart cities is to properly model and understand human behaviours through psychology, user experience design and social computing (Naphade et al., 2011). ■
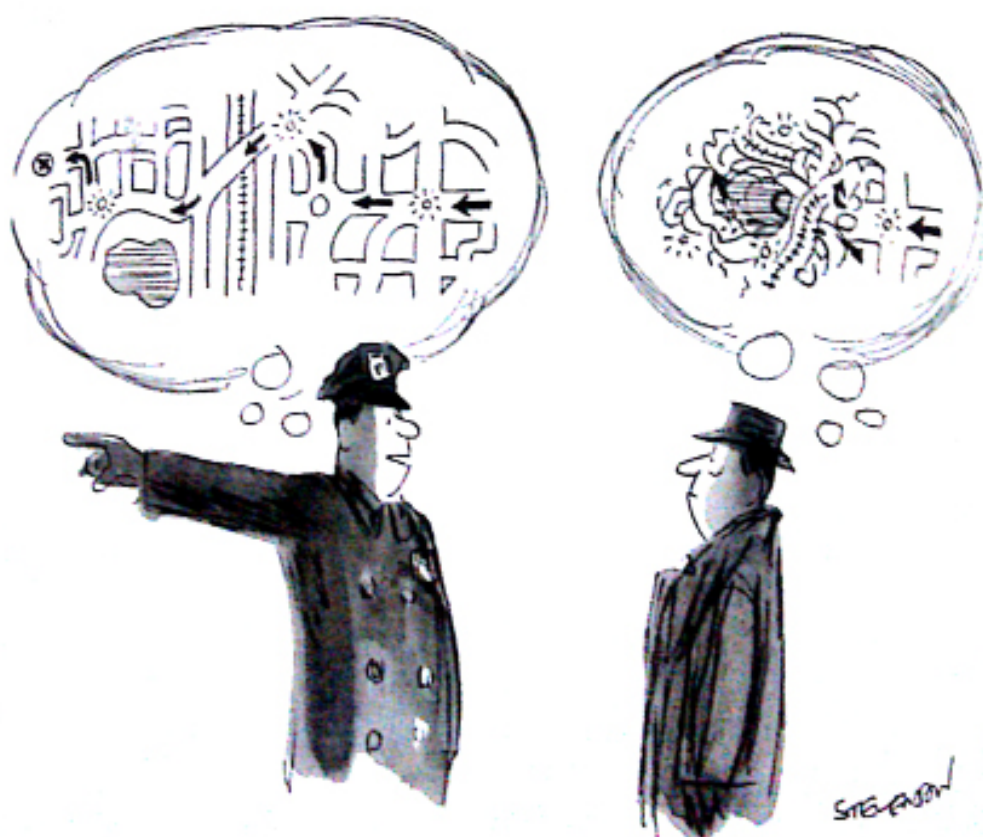
"I'm sorry, gentlemen, but so far Dr. Ward and I have discovered items of only routine archeological interest. Nothing worth photographing at all."

BOOKS CORNER
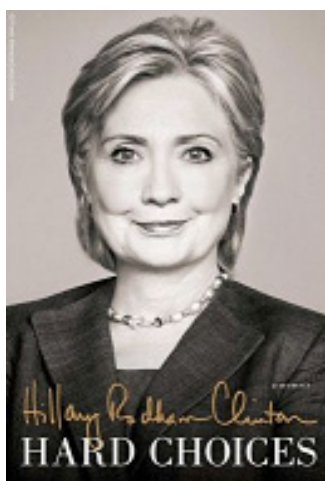
Hard Choices

By: Hillary Rodham Clinton; 656 pages; Publisher: Simon & Schuster; Publication date: 6/10/2014; Price: Hardcover $21.84 (save 37%)

Available for Pre-Order. This item will be available on June 10, 2014

Hillary Rodham Clinton's inside account of the crises, choices, and challenges she faced during her four years as America's 67th Secretary of State, and how those experiences drive her view of the future.

"All of us face hard choices in our lives," Hillary Rodham Clinton writes at the start of this personal chronicle of years at the center of world events. "Life is about making such choices. Our choices and how we handle them shape the people we become."

In the aftermath of her 2008 presidential run, she expected to return to representing New York in the United States Senate. To her surprise, her former rival for the Democratic Party nomination, newly elected President Barack Obama, asked her to serve in his administration as Secretary of State. This memoir is the story of the four extraordinary and historic years that followed, and the hard choices that she and her colleagues confronted.
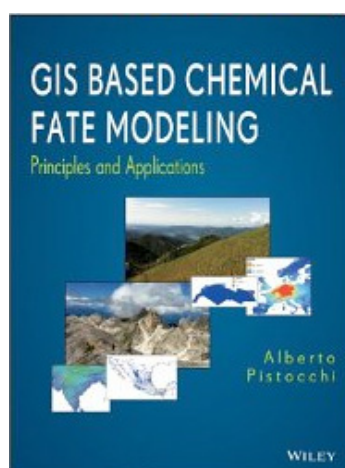
GIS Based Chemical Fate Modeling: Principles and Applications

By: By: Alberto Pistocchi, 520 pages ; Publisher: Wiley; 1 edition (March 10, 2014); Price: $100

Based on the author's firsthand experience in environmental assessment, GIS Based Chemical Fate Modeling explores both GIS and chemical fate and transport modeling fundamentals, creating an interface between the two domains. It then explains how GIS analytical functions enable scientists to develop simple, yet comprehensive spatially explicit chemical fate and transport models that support real-world applications. In addition, the book features:

•   Practical examples of GIS based model calculations that serve as templates for the development of new applications

•   Exercises enabling readers to create their own GIS based models

•   Accompanying website featuring downloadable datasets used in the book's examples and exercises

•   References to the literature, websites, data repositories, and online reports to facilitate further research

•   Coverage of important topics such as spatial decision support systems and multi-criteria analysis as well as ecological and human health risk assessment in a spatial context

GIS Based Chemical Fate Modeling makes a unique contribution to the environmental sciences by explaining how GIS analytical functions enhance the development and interpretation of chemical fate and transport models. Environmental scientists should turn to this book to gain a deeper understanding of the role of GIS in describing what happens to chemicals when they are released into the environment.

Startup Leadership: How Savvy Entrepreneurs Turn Their Ideas Into Successful Enterprises

*By: Derek Lidow; 272 pages, Publisher: Jossey-Bass; 1 edition (March 3, 2014); Price: $19.76*

This book provides a good overall view of ArcGIS with accurate examples. The chapter topics are arranged in a logical

By Anyone can start a business. But only leaders can succeed.

Most entrepreneurs know the long odds: only a fraction of them will lead their enterprises through the rocky stages of growth to launch self-sustaining companies. Very few know how to outflank the failures that await them at every turn, including the most painful—being abandoned by key members of their team or getting pushed out by their board just as their business starts to generate real value.

Startup Leadership demonstrates how founders can adopt the skills that are required at each stage of their journey. Whether you are at the idea stage or managing a more mature enterprise, you can start to recognize the fundamental conflict: how to balance your selfish drives with the more selfless leadership required by the organization at any given time. The book shows you how to achieve this balance by:

•   Assessing your unique motivations, traits, and skills

•   Creating a personal leadership strategy that leverages your strengths and mitigates your weaknesses

•   Mastering how to lead teams, including boards

•   Understanding the five prerequisites for driving change

•   Taking control of your inevitable crises, thereby strengthening your team and your leadership
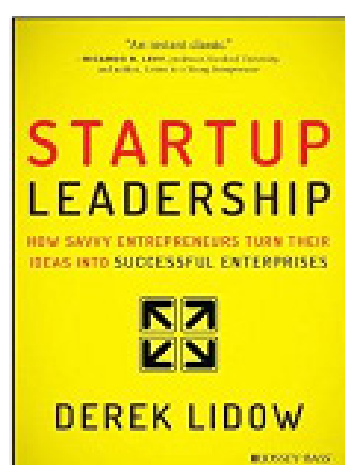
Events

Transform Award

Transform MENA is hosting a conference on rebranding and reputation in Dubai on 2 June at the JW Marriott Marquis Hotel. To be the first to find out about updates to the programme and future conferences, sign up for details using the form below.

Attend the conference for:

- Insights on developing an ongoing brand strategy
- Inspiring success stories from brands that have got it right
- Tips on finding your employer brand
- Practical advice on intellectual property
- How to engage and motivate your employees to adopt changes to your brand
- Suggestions for a successful implementation and execution strategy
- Ideas for unique marketing opportunities that will strength your brand identity

When: 02 June, 2014

Where: JW Marriott Marquis Hotel, Dubai, UAE, United Arab Emirates

The Emergency Management and Crisis Response Summit

Description: The Emergency Management and Crisis Response Summit proudly presents a platform for Industry Leaders, Sector Experts, Government Agencies, and other stakeholders to collaborate, learn, share, and develop stronger and more agile Emergency Management and Crisis Responses. This three day Summit, is tailor made for industry professionals from aviation, infrastructure, and oil and gas, and will provide in-depth industry-specific insights on Emergency Management and Crisis Response.

Comments: Today all businesses depend on a secure supply chain of a products and services. Therefore, protecting vital assets stands as their key responsibility. The ever increasing threats of terrorism, natural disasters, and human error pose growing challenges for protecting those critical assets.

Information technology, now the bloodline of nearly all economic and social activity, brings new vulnerabilities and even more challenges. To protect these assets, businesses, governments, and the private sector must work cooperatively to ensure effective protection.

When: 10 to 12 June, 2014

Where: Dubai, UAE, United Arab Emirates

Arabnet Digital Summit 2014

The Arabnet digital summit 2014 aims to build bridges between the MENA region and the world; looking for opportunities to export talents and services, as well as import expertise.

Media & content: big data, brands and content creation, and financial content

Marketing & Advertising: Digital PR Agencies, The future of Marketing and Advertising

Social Media: Social Media and Customer Service, Social Solutions and Analytics; and Social Media Case Studies

eCommerce: Bit Coins, Mobile Wallets, and Grocery eShopping

Mobile: VoIP and Message Apps, Mobile Magazines, and Innovation in Mobile Advertising

Technology; Wearable Technology, Internet of Things and Smarter Devices

Entrepreneurship; From Idea to Private Equity; The Startup Track, June 3rd, will feature discussions supporting entrepreneurship through all its stages.

Digital Showcase; throughout the program we will be featuring a series of 3 minute pitches by thriving startups from across the Middle East and North Africa region to talk about their business and collaborating prospects.

When: 03 - 05 June, 2014

Where: Hotel Atlantis The Palm Dubai UAE

Kuwait Downstream Technology

Expanding refineries and increasing petrochemical production by applying the latest technologies and maintaining the highest environmental standards.

The Middle East region has actively started expanding the capacity of its refinery and petrochemical industry. At the moment, a lot of investments are being made in order to expand/upgrade existing refineries, identify the most suitable technology, and integrate refineries and petrochemical plants.

Kuwait is currently aiming at becoming the largest producers of clean fuels in the Middle East by increasing its total crude handling capacity to 1.4 million barrels per day by 2018. With more than $30 billion invested, the Kuwait Clean Fuels Project is a huge step forward for KNPC. With this in mind, IQPC is pleased to announce its 2nd Kuwait Downstream Technology Conference scheduled to take place from 1 -4 June 2014 in Kuwait City.

This event will support the implementation of these new projects in the refining and petrochemical industry through keynote presentations that will uncover the challenges faced by downstream experts.

When: 01 - 04 June, 2014

Where: JW Marriott Hotel, Kuwait City, Kuwait

BALOCHISTAN RURAL SUPPORT PROGRAM (BRSP)

GT Ref ID: 026899
Type: Tender Notice
Bidding Type: International
Tender Notice No: BRSP/BCDP/ EUD/DCI-ASIE/2013/327-025/07

Description:

Balochistan Rural Support Program (BRSP) is a non-profit organization registered under section 42 of company ordinance 1984 under securities exchange commission of Pakistan, situated at House No. 5-A Gulshn-e-Janan Street, Saryab Road, Quetta. BRSP is working for rural development and Improvement of infrastructure of rural areas of Balochistan. These instructions set out the rules for the submission, selection and implementation of contracts financed under this call for tenders.

1. **Supplies to be provided:**

Item	Qty	Type/Specification of Vehicles
1	03	4x4 pick-up double cabins 2000 to 3500 cc diesel/Petrol engines 5 speed manual, ABS, four doors, AC, Heater, seat belts, with spare wheel.
2	12	4x4 Jeep type vehicle 4 seated, 1300 to 1500 cc Petrol engines, AC, Heater, Manual transmission, Power steering, seat belts and spare wheel.
3	2	Sedan cars 5 speed automatic/manual transmission, 1300 cc to 1800 cc petrol engine, EFI with VVT-I with ABS, power steering, AC, Heater, power window, seat belts and spare wheel.
4	1	4x4 Jeep type vehicle minimum 5 seated, 2000 to 2600 cc petrol engine, dual AC, Heater, Automatic transmission, ABS, SRS front airbags, Power steering, seat belts and spare wheel.

Tender Notice Publication	**May 12, 2014**	
Dead line for clarifications	**May 29, 2014**	**12:00 pm**
Dead line for submission of bids	**June 16, 2014**	**12:00 pm**
Tender Opening Session	**June 17, 2014**	**12:30 pm**

Contact Details
Chairman Procurement/Evaluation Committee (BRSP)
House No. 5-A, Gulshan-e-Janan Street Sariab Road,
Quetta, Balochistan, Pakistan.
Ph: 00-92-81-2471437-39
Email: ikram.ops@brsp.org.pk
Deadline: 16-6-2014

STATE OF QATAR

Notice ID #: 237
Bid Date: 05/15/2014
Type Of Notice: Request for Qualifications

State Of Qatar - Notification For Expression Of Interest For The Pre-Qualification For Procurement of Project And Construction Management Consultancy Services For The Proposed New Medical City And Trauma Mass Casualty Hospital - (Project: BA 14/15 D 001 MRPSC).

Invitation to Pre-Qualify:
The Public Works Authority (PWA) of the State of Qatar (ASHGHAL) wishes to pre-qualify a short-list of competent companies (the "Pre-qualified Applicants"), for Invitation to Tender for the 'Medical City and Trauma Mass Casualty Hospital' (TMCH) Project and Construction Management Consultancy Services. This project will be located adjacent to Qatar University in Doha, Qatar. The PWA is seeking expressions of interest from applicants to be prequalified to carry out the service. The Applicant shall demonstrate relevant experience, capabilities, understanding and commitment to the work with the PWA to achieve the expected delivery and standard of services.

Submission of Pre-Qualification Application
All Submissions Shall Be Addressed To: Public Works Authority
Manager of Contracts Department Ashghal Tower (1) – Ground Floor
P.O. BOX: 22188, Doha, Qatar

Careers

PROJECT COORDINATOR INFORMATION, COUNCELLING AND LEGAL ASSISTANT-NATIONAL POSITION (NORWE-GIAN REFUGEE COUNCIL - IRAN)

NRC is seeking to recruit an Information Counceling and Legal Assistant (ICLA) Project Coordinator.

NRC, which bases its interventions on the premise of 'durable solutions' for refugees, returnees and Internally Displaced Persons (IDPs), established an office in Tehran in January 2012 to assist in global efforts to counter mass Afghan displacement. NRC is currently working in the Iranian provinces of Kerman, Semnan, Alborz and Qom, assisting refugees living in settlements as well as in urban and rural settings.

The ICLA Project Coordinator reports to the Country Director and will be based in Tehran.

Job description:
•   Coordinate and implement the ICLA projects according to strategy, proposals and plans
•   Ensure adherence to NRC policies and donor requirements
•   Develop annual activity and work plans
•   Supervision, training and development of ICLA staff
•   Organize trainings for the ICLA team, relevant partners and beneficiaries
•   Monthly activity/project reports and other reporting as required
•   Ensure proper filing of all project documents

Qualifications:
•   At least 5 years previous work experience with a satisfactory performance in the same or similar field preferably with UN or NGOs;
•   University degree in Law or Human Rights
•   Fluency in written and spoken English and Persian
•   Proven communication, interpersonal, representation, negotiation and leadership skills
•   Proficiency in Microsoft Office Package
•   All employees of the Norwegian Refugee Council should be able to adhere to our Code of Conduct and the four organizational values: Dedicated, innovative, inclusive and accountable

We offer:
•   Commencement: July 2014 or before
•   Contract period: 12 months
•   Salary/benefits: According to NRC's Iran general directions. This is a national position
•   Duty station: Teheran.
•   Candidates must be able to provide original certificates and diplomas upon request
•   Application procedures and CV registration: Please note that you are required to enter the geographical location for all your previous positions while registering your CV. There is no specific field for this information in our CV form, but you can use the "Company name" field for both company and location

How to apply:
For more information and to apply go to:
www.webcruiter.no/WcMain/AdvertViewPublic.aspx?oppdragsnr=2204689020&Company_Id=1879266653&cols=3,7&orderby=4&listtype=1&culture_Id=EN

Closing date: 30 Jun 2014

DEPUTY DIRECTOR OF PROGRAMS - IRAQ

The International Rescue Committee (IRC) responds to the world's worst humanitarian crises and helps people to survive and rebuild their lives. Founded in 1933 at the request of Albert Einstein, the IRC offers lifesaving care and life-changing assistance to refugees forced to flee from war or disaster. At work today in over 40 countries and 22 U.S. cities, we restore safety, dignity and hope to millions who are uprooted and struggling to endure. The IRC leads the way from harm to home.

General Responsibilities:
•   Provide leadership to the country program as a key member of the Senior Management Team.
•   Provide technical support for the senior program staff and Grants unit.
•   Oversee donor and internal narrative reporting, ensuring that all reports are of high quality and meet the standards of the IRC.
•   Oversee the development of donor proposals - log frames, narratives and budgets - based on the country program priorities.
•   Ensure staff compliance to security, procurement, HR and financial management protocols.
•   Represent the program to donors, UN and partner INGOs, and national and local government officials.

Key Requirements:
•   Postgraduate degree in International Development, International Law or similar relevant social science or related field.
•   Excellent professional track record with at least six years of management level experience including NGO experience and working in protection program implementation
•   Previous experience managing programs financed through US, EU, UN and private foundations, with previous competitive RFA/P experience a plus
•   Strong coordination, communication and advocacy skills and demonstrable capacity for working effectively in a close, multi-disciplinary cooperative team environment
•   Proven ability to live and work in an un stable, insecure environment and maintain sense of humour
•   Prior work experience in Iraq or Middle East context preferred.
•   Prior experience overseeing the implementation of programs in large-scale emergency and post emergency response contexts.
•   Technical knowledge in one or more of the following areas: WASH, education, livelihoods, child protection, WPE, conflict sensitivity, community protection.
•   Strong management/leadership skills including capacity building and mentoring.
•   Previous budget and fiscal oversight responsibilities.
•   English is required, Arabic is desirable.

SPECIFIC SECURITY SITUATION:
The DDP will be based in Erbil, Iraq with travel throughout Iraq. The security situation in Iraq continues to be volatile. Security measures are in place (guarded compounds, communication systems, movement restrictions) in Baghdad. The candidate should be prepared to implement programming in remote and insecure environments. This is a limited-accompanied position.

How to apply:
Please follow this link to apply: http://ch.tbe.taleo.net/CH02/ats/careers/requisition.jsp?org=IRC&rid=10509&cws=1

Closing date: Closing date: 13 Jul 2014