



Golden
Ring
Economic
Forum



GRAF - UMT JOINT WEBINAR SERIES PROCEEDINGS



REGIONAL GEOSTRATEGIC CHALLENGES: GOLDEN RING BLOC- AN OPPORTUNITY FOR PAKISTAN'S STRATEGIC & ECONOMIC SECURITY



Volume 2

Collaboration:

Golden Ring Economic Forum.

University of Management & Technology, Lahore.

Office of Research, Innovation & Commercialization, UMT.

**October, November, December
(2020)**

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**“REGIONAL GEOSTRATEGIC CHALLENGES:
GOLDEN RING BLOC — AN OPPORTUNITY FOR
PAKISTAN'S STRATEGIC & ECONOMIC
SECURITY.”**

(VOLUME – 2)

3rd Series of Webinars 2020

1. NATIONAL ECONOMIC SECURITY.
2. REGIONAL ENERGY GRID & NATIONAL ENERGY SECURITY.
3. NATIONAL FOOD SECURITY.

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1. FOREWORD BY CHAIRMAN GREF, LIEUTENANT GENERAL SIKANDER AFZAL HI(M), (Retd.).

GREF's endeavors to work in the field of enhancing Pakistan's economic ties with regional countries especially the "Golden Ring Countries" continues despite the constraint of COVID-19 pandemic in travel and physical interaction with these countries. The success of the series of webinars organized domestically and in collaboration with "Golden Ring Countries" has strengthened our resolve to work even harder in this field of economic collaboration with countries that lie closer to Pakistan. The changing geopolitical environment around Pakistan also reinforces our belief that Pakistan must have closer and deeper ties with these countries.



This publication is the compilation of our webinars on Economy, Energy and Food Security. Food Security ensures a nation that is self-reliant in meeting the needs of its populace, keeps them nourished and safe and peace within. Energy security ensures the industry keeps producing meeting its a countries domestic needs and producing goods for exports that generate foreign capital. This ensures economic security which guaranties its independence, sovereignty and military strength to stand against unjust pressures and demands of countries that are working against the interest of Pakistan.

I would like to thank all the eminent speakers who spared time from their schedules to participate in these webinars and share their valuable thoughts on these important issues. I would specially like to thank Engineer Hasnain Reza Mirza, President GREF for all the time and effort he put in to make it all possible. I would also like to thank the Board of Directors of GREF especially Mr. Abrar Ahmed for their contributions and input.

I am sure the recommendations that are an outcome from these interactions will be considered favorably by those who are working in the realm of Policy making. This will greatly reward the efforts of GREF in its humble contributions to Pakistan.

Chairman
Golden Ring Economic Forum

2. MESSAGE BY DIRECTOR GENERAL UMT, Mr. ABID HUSSAIN SHERWANI

On behalf of the University of Management & Technology (UMT), I am proud to present the third GREF-UMT Webinars series in collaboration with our partners the Golden Ring Economic Forum (GREF). Owing to the positive response we received after successfully completing the first two webinar series we have now launched our third series.

This webinar series consists of three highly informative webinars with well-known experts providing key insights and presentations on their webinar themes respectively. The themes for these webinars are;



- **‘National Economic Security’** for Self -Reliance, this first webinar will focus on the importance of self-reliance for Pakistan due to the changing Regional Geo-strategic conditions around the globe.
- **‘Regional Energy Grid & National Energy Security’**, the second webinar will explore the concept of dependency of economies on energy and the energy crises that Pakistan faces and how the crises can be managed.
- **‘National Food Security’**, the theme for the third webinar is the major economic and security issue that demands our utmost attention. We shall be discussing as to how our food security issues could be resolved with the help of Golden Ring countries.

UMT's participation and continuous dedication to the cause of these webinars stems from our desire of applying our academic expertise for the good of the nation and to foster a culture where academic institutions, in collaboration with the industry, can play a vital role in the planning for national development. Through these webinars we hope to urge our participants, whether they be experts, industry representatives, Government officials, students, researchers, and most importantly, policy makers to collectively work towards the betterment of the Country.

3. CONCEPT PAPERS.

The Golden Ring Economic Forum (GREF) is a Think-Tank established in 2015 at Lahore by a group of businessmen, ex-servicemen, former diplomats, industrialists and scholars and registered under the Society's Act in 2016. GREF is working to enhance economic cooperation between China, Iran, Pakistan, Russia and Turkey. The grouping of these five countries has been termed as the "GOLDEN RING": "GOLDEN"- because over 30% of total human and natural resources of the planet are with these five countries and "RING"— because they form a ring around Central Asia and Afghanistan.

GREF Mission is "To Work for the Establishment of a Regional Strategic Economic Group consisting of China, Iran, Pakistan, Russia and Turkey" with the following objectives:

- a. Lobbying for a new strategic economic grouping for national economic security.
- b. Developing common, long term joint strategic economic interests of other four countries in Pakistan.
- c. To act as a bridge between the policy makers and stakeholders.
- d. To assist the government in developing policy framework, procedures, rules and regulations for multilateral strategic economic cooperation.
- e. To work for the establishment of Joint Customs Union of member countries.
- f. To assist in developing advanced joint industrial groups in Pakistan.
- g. To collaborate, cooperate, coordinate and initiate joint advance research programs/projects in applied and social sciences and technology.

In a short period of four years, GREF has made some notable achievements at the international level. GREF has been successful in convincing the concerned government quarters of China, Iran and Russia to support the initiative of GOLDEN RING Economic Bloc. China sees it as a regional subset of their BRI whereas, Russia takes it as part of their North-South Economic Bridge. Isolated Iran takes it as an opportunity to safeguard their economic security like Pakistan. Therefore, the idea was well received and accepted by member countries. As a result of GREF lobbying efforts, they all agreed to hold the first Parliamentary Speakers Conference in 2017 at Islamabad, which was made a permanent feature unanimously. The second and third consecutive meetings were held in Tehran (2018) and Ankara (2019). Meetings at Beijing and Moscow were postponed due to Covid-19. The cycle will start again once the pandemic is over.

In the light of changing regional geostrategic conditions and their ramifications on Pakistan. Evolving environment in Afghanistan, ongoing confrontation between China and India, Kashmir a flash point, threats and pressures on Pakistan through FATF, IMF and other similar regimes. Pakistan's future relations with KSA and gulf countries in light of Arab-India-Israel-US grouping, Arabs and Pakistan's position in case of conflict in Persian Gulf. All of this demands that Pakistan needs a serious revisit to its economic, foreign and security policies to face the future challenges of national economic and territorial security. Pakistan needs to explore options to come out of Euro-Dollar hegemony and trade with its regional neighbors in Barter through a SPV or in local/common currencies. Pakistan also needs to look for and develop alternate sources of fuel and energy supplies other than the conventional ones.

GREF has successfully conducted several meetings with high level officials from China,

Iran and Russia confirming their acceptance of GREF idea and initiative. The objective of all this, is to jointly explore opportunities and possibilities for multilateral strategic economic cooperation in different fields and to find an answer to “HOW & HOW SOON”. As a result of consultations with Chinese, Iranian and Russian embassies at Islamabad and high officials at their respective capitals, GREF has planned a few short term and long term initiatives covering different aspects of economic and national security.

Some of the GREF initiatives are:

- a. Post Covid-19 Shared Economic Recovery jointly by China, Iran, Pakistan and Russia.
- b. Energy Security through Regional Energy Network (Grid).
- c. National Economic Security through Economic Investments of Golden Ring Countries in Pakistan.
- d. Establishment of Joint Media Association of Golden Ring Countries.
- e. Trade Security by Establishing “Joint Barter Chamber and Trade SPV” of Golden Ring Countries.
- f. Agriculture and Food Security.
- g. Development of Joint Advanced R&D Facilities in Engineering, Sciences and Technology.
- h. Establishment of Joint Counter Terrorism Council.

In this regard GREF has planned several rounds of webinars covering different aspects of national security. Two rounds of webinars covering Shared Economic Recovery, Defense & National Security, National Interests Based Foreign Policy and Developing a new Media Policy have already been very successfully completed. Very positive and productive result oriented discussions were held and all countries fully supported these initiatives and agreed to work together. Now GREF has planned the third series of webinars to discuss the topics keeping in focus the strategic aspects of the new grouping of these five countries --- the Golden Ring Group and how Pakistan can extract maximum benefits from it.

The following are three webinars:

1. Agriculture and Food Security.
2. Energy Security through Golden Ring Regional Energy Grid (here energy means all forms, like electricity, gas, oil, nuclear, etc.).
3. Strategic Economic Security.

Through these webinars GREF seeks to generate a discussion on the effects of the evolving regional developments around Pakistan and how Pakistan can adjust to the evolving opportunities in the short and midterm for its strategic economic security. How Pakistan can work with Iran and Russia circumventing US and Arab pressures? How Pakistan can ensure its energy security when KSA and UAE, the main sources of Pakistan's oil supplies, have signed defense and security agreements with Israel and India? Since, Pakistan is not willing to leave CPEC, nor its new friend Russia and is also not willing to go against Iran. Under this scenario they will squeeze Pakistan from every side, economy and energy is the most effective weapon. There is an eminent threat that India and Israel will exert pressure by disturbing oil supplies to Pakistan hence, crippling our economy. The discussions at these webinars are intended to specifically revolve around the issues related to the three major aspects of national economic security (i) economic security (ii) energy security and (iii) food security.

3.1. National Economic Security For Self-Reliance

Self-reliance of a country means its autonomy, independence and capacity of freely making its decisions, foreign and other policies. National economic security for self-reliance is crucial for Pakistan due to rapidly changing regional geo-strategic conditions around Pakistan. One of the present existing options available for Pakistan to stand on its feet is the economic security through international connectivity, partnerships and strategic economic investments in Pakistan. This will develop infrastructure and industry to stimulate economic development and growth resulting in economic stability and security.

The new paradigm shifts of innovations in technology, manufacturing and supply-chain management (improved the products and services with growing consumer markets) have emphasized to influence the approaches of human capital management. Pakistan has the abundance of human resource but less of human capital as compared to other economies in the region and the World. The notion of “Economic Security for self-reliance” requires serious participation of all the segments of population by making them active and productive. The multi-sectoral cooperation mechanism for macro-stability ensures the better Human resource management policies in different industries. The collaboration with the Golden Ring economies for economic security will create new opportunities through higher investments in education, health, technological improvements and trade activities. Talking of international trade volumes of four Golden Ring countries, other than Pakistan, is over US\$ 5.00 trillion. Pakistan's share in this regional market is only 0.7%, whereas, some 65% of items imported by them are those which Pakistan has but not exporting to them.

Pakistan's energy is mostly based on non-renewable energy resources which have further cost in case of environmental degradation. Pakistan's primary commercial energy supplies comprise of thermal power is highly dependent on fossil fuels. Pakistan is an energy deficient economy, and has always been an energy importer. Russia and Iran are the main exporters of energy sources (oil, gas, coal and petroleum products) close to Pakistan. Pakistan may propose to them, under the Golden Ring bloc arrangement, to trade these on the basis of barter thus reducing its foreign currency balance of payments.

GRESF is seeking recommendations from the experts on:

- a. How best Pakistan can extract benefits for strengthening its economic security from the economies of Golden Ring countries?
- b. What policy changes and modifications are required in basic and on macro levels for achieving economic self-reliance and independence?
- c. To benefit from barter trade with Golden Ring countries what basic changes will be required on policy level?
- d. To come out of Dollar/Euro and IMF/World Bank Group shackles how best the Golden Ring bloc currency free or common currency concept can work?
- e. What national arrangements will best serve integrated strategic economic planning?

3.2. Regional Energy Grid for National Energy Security

Energy is the backbone of any economy. No economic development and growth can be achieved if a country is energy deficient since it cannot develop its industry and commerce. Due to recent regional developments where archrivals of Pakistan, namely India and Israel

have signed security agreements with Gulf Arab countries and KSA and huge military presence of US in the Persian Gulf and Middle East have put Pakistan's energy supplies from these countries at risk. This situation warrant that we in Pakistan start working on alternate options to safeguard our energy security interests. The Golden Ring countries, Azerbaijan and CARs are directly linked to each other by land, they have common borders. GREF initiative of Golden Ring Regional Energy Grid is based on an energy network of all of these thirteen countries since, some of them have abundance in gas, some in oil and others in hydropower. They all have lots of opportunities to develop solar and wind power projects. Due to their physical connectivity it should be very easy to develop cross border transmission networks through pipelines and power lines. Since, Pakistan is the most energy starved country in this region therefore, the initiative serves best its interests for energy security. On the other hand Western China can be fed from Iran-Pakistan-China oil and gas pipelines. Hydropower transmission lines from CARs can also feed Western China and Pakistan. This regional energy cooperation is the best alternative to the energy source from Gulf and Middle East. The webinar will focus on different issues and possibilities related to this concept.

3.3. National Food Security

The 1996 World Food Summit defined food security as “a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious foods that meets their dietary needs and food preferences for a healthy life.” This definition incorporates several needs: availability of food, access to food, and for the food to be culturally appropriate. There are many factors in today's global environment that exacerbate food security.

Elements building the framework of food and nutrition security: (i) availability, (ii) access, (iii) use and utilization, and (iv) stability.

Typically, food security is thought of as being related to availability and access of foodstuff. Yet, the threat to food security also lies with urbanization, income disparity, overpopulation, ecosystem degradation, animal health, and food wholesomeness. If the populace has enough to eat they are likely to be satisfied and not agitate on petty issues. Therefore, it is of paramount to evolve a food security policy which ensures sufficiency, benefits to the grower and the market.

GREF is seeking recommendations from the experts on:

1. How can food security contribute to overall economic and national security of a country?
2. What lessons can Pakistan learn from the Golden Ring Countries experience in food security?
3. What Policy changes and incentives are required to integrate the various elements of food security like the grower, supplier, farm to market transporter, processor, exporter and the manufacturer which are part of the food chain in order to have a wide spectrum spread of economic dividends?
4. Specific recommendations to achieve food security on one hand and to become the major source food supplies to Golden Ring Countries and CARs.

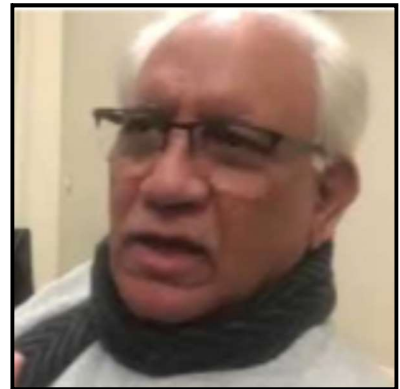
4. SPEAKERS.

4.1. Dr. Mr. Arshad Zaman.

Dr. Arshad Zaman is an independent Expert on economic planning, economic security and self-reliance. He had resigned from the post of Chief Economist, Planning Commission of Pakistan in 1992. Earlier he had been employed at the World Bank in Washington, D.C. from 1970-1982. He is Ph.D in mathematics and economics. He was a member of Committee on Economic Security and Self-Reliance, formed by the Government of Pakistan in 1991. Dr. Zaman is considered as an authority on economic security.

4.2. Mr. Asif Sharif.

Mr. Asif Sharif specializes in marketing, project development in agriculture, production process mechanization, forward engineering, energy and responsible citizenship. He introduced most of the agricultural machinery in use in Pakistan, developed precision machinery for land leveling, raised-bed cropping, seeding, compost/fertilizer dressing, transplanting, weeding and soil aerating. Another hallmark of his achievements is growing rice on raised beds in moist soil; a novel initiative to save water use by 70%.



Mr. Asif Sharif collaborated with Cornell University & FAO on unification of three diverse technologies known as System of Rice/Crop Intensification (SRI/SCI), Conservation Agriculture (CA) and Organic Farming (OF), a sequel named as "Paradoxical Agriculture". He is globally recognized as an activist for No-Till, raised bed cropping, no inundation of soil, input optimization and maintaining organic soil coverage for enhancing agricultural profitability and sustainability.

He has served as President of Pakistan Belgium Business Development Forum, Honorary Consul for the Republic of Poland, Member Board of Directors Zarai Taraqiati Bank (Agri. Dev. Bank) in addition to his membership of advisory boards of various governmental and private sector bodies. Mr. Sharif introduced and headed various prestigious global companies in Pakistan such as: Ford Motor Company, Sperry New Holland, Ford New Holland, Case IH, Toft, Long Manufacturing, Butler, Howard, Ursus and Kenwood to name a few.

He has been trained in the U.S, Australia and Europe and visited countries in five continents for study, training, business and leisure. He has developed major projects and presented technical papers on crop production processes and methods and practically transformed many farms by implementing sound programs for mechanization, management, operations, farm design, irrigation and production systems, knowledge based skills development and timely provision of resources for higher productivity.

4.3. **Mr. Hasnain Reza Mirza.**

Mr. Hasnain Reza Mirza is an Electrical Engineer. He is the founder of Golden Ring Economic Forum. He is presently working as the Chief Executive of M/s. Mirza Associates Engineering Services (Pvt) Ltd. an engineering consultancy firm established in 1985.



Mr. Mirza has served as Chairman and Vice Chairman of several national and inter-national Committees, Fora's and organizations, as Commissioner to Pakistan for Islamic Chamber Research and Information Center of OIC, as Advisor to the Chairman NAB AJK, Chairman SUPARCO and VC FJWU, Dean of School of CS & IT at NCBA and as Chairman of Pakistan Section of IEEE Inc. USA. He was Managing Director of M/s. Special Assignments & Systems and Senior Engineer at Dr. A.Q Khan Research Labs, Kahuta. He had also worked at M/s. Paktel Ltd. as Operations Engineer.

Mr. Mirza had also served as Member of Central Council of Institution of Electrical & Electronics Engineers Pakistan (IEEEEP) and as a Member at the Executive Committee of Lahore Chamber of Commerce & Industry.

4.4. **Dr. Mr. Ikram ul Haq.**

Dr. Ikramul Haq, Advocate Supreme Court of Pakistan and Chief Partner of Huzaima & Ikram, a leading law firm. He has studied journalism, English literature and law for his Master's and Doctorate. He served in the apex revenue authority of Pakistan, Federal Board of Revenue (FBR) from 1984 to 2006, after joining Civil Services of Pakistan (12th CTP). Besides, tax practice in Pakistan, he works extensively in inter-national tax arena. His expert advice is frequently sought by leading multinational companies working globally. His opinions in tax and other matters are



quoted in Reuters and other leading international news agencies and broadcasted by BBC in Urdu programme Sairbeen. He holds a Doctorate in International Taxation (specialization in transfer pricing). He is Adjunct Faculty of Lahore University of Management Sciences (LUMS). He is also author/editor of various publications of IBFD (International Bureau of Fiscal Documentation). Dr. Ikram has been practicing since 2006 and teaching laws since 1988. He has been helping Tax Reform Commission (constituted in 2014) to prepare report for tax reforms and evaluate existing tax policy.

Dr. Ikram enjoys an internationally acclaimed reputation of employing a pragmatic approach in his consultancy services. Working with public/private sector institutions and banking companies, Dr. Ikram provides a unique perspective by combining macro level tax policy with a special focus on the nitty-gritty of national tax codes. He has also provided structuring and transactional advice to countries and companies on the full range of corporate tax activities, including mergers and acquisitions, reorganizations, and structured finance. Dr. Ikram's proactive advice also includes international structuring of inbound activities by multinational enterprises. As a result of his experience, he was selected by IBFD to write the country chapter on Transfer Pricing, Tax and Business Laws and Advance Rulings for its publications. He is author of many books and over 2500 articles

on taxes, public finance and political economy printed by various journals, magazines and newspapers in and outside Pakistan. He is member of International Fiscal Association (IFA).

He has also coauthored with Huzaima Bukhari many books that include Pakistan: Enigma of Taxation, Towards Flat, Low-rate, Broad and Predictable Taxes, Law & Practice of Income Tax, Law , Practice of Sales Tax, Law and Practice of Corporate Law, Law & Practice of Federal Excise, Law & Practice of Sales Tax on Services, Federal Tax Laws of Pakistan, Provincial Tax Laws, Practical Handbook of Income Tax, Tax Laws of Pakistan, Principles of Income Tax with Glossary and Master Tax Guide, Income Tax Digest 1886-2011 (with judicial analysis). He is author of Com-mentary on Avoidance of Double Taxation Agreements signed by Pakistan, Pakistan: From Hash to Heroin, its sequel Pakistan: Drug-trap to Debt-trap and Practical Hand-book of Income Tax.

He regularly writes columns for many Pakistani newspapers and international jour-nals and has contributed over 2000 articles on a variety of issues of public interest, printed in various journals, magazines and newspapers at home and abroad.

4.5. Dr. Mr. Iqrar Ahmed Khan.

Prof. Dr. Iqrar Ahmad Khan, is Vice Chancellor, University of Agriculture Faisalabad, in addition to his duties as the UAF Vice Chancellor, he had been assigned additional charge of Vice Chancellor Office, Muhammad Nawaz Sharif University of Agriculture (MNSUA), Multan.



In his ongoing tenure of Prof Dr. Iqrar Ahmad Khan, the UAF has become the ever-first University of the country ranked among the top 100 universities of the globe. According to the National Taiwan University (NTU) Ranking, it is 97th best university across the globe and 20th in Asia Pacific in the subject of agricultural sciences. It has attained 25th best green university statues in specialized higher education institutions, according to UI Green Metric World University Ranking 2014. The Pakistan Council for Science and Technology (PCST) has also ranked the University as top university of Pakistan in the Degree Awarding Institutions for the Year 2013 with highest score of 779.17 among all universities of the country It is also a winner of 2012 Science and Technology Prize 2012 announced by the Islamic Development Bank (IDB) among the 57 Islamic countries.

Prof. Dr. Iqrar Ahmed Khan did his Ph.D. from the University of California, Riverside, US. He has developed a potato variety (PARS-70), pioneered the research on breeding seedless Kinno and developed new varieties of wheat. He is also the author of hundreds of publications which includes five books and several book chapters. He has initiated an internationally acclaimed program to solve the problem called Witches' Broom Disease of Lime, which poses a global threat to citrus fruits, the vitamin-C provider for masses.

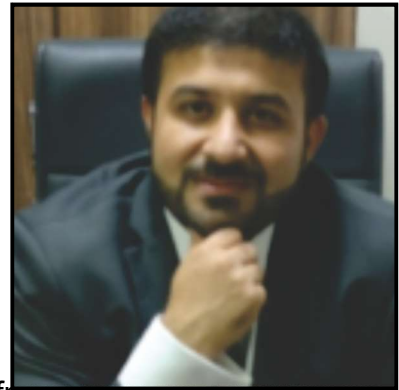
4.6. **Dr. Nauman Arshed.**

Dr. Nauman Arshed has done his Ph.D. in Economics, Statistics and Mathematics. His expertise are analytical and quantitative reasoning skills, having experience in Econometrics, Survey Development, Management, Big Data, Consultancy and Machine Learning. He participates in research with his wide array of multi software skills like SPSS, STATA, Eviews, AMOS, Smart PLS, Microfit, R, Python, Weka, QGIS, Vensim, Nvivo, Endnote, PowerBI, Tableau and AWS. Currently Dr. Nauman is an Assistant Professor at the Economics Department of UMT.



4.7. **Dr. Mr. Nauman Khalid.**

Dr. Khalid is HEC approved Supervisor in field of Agriculture and Food Technology. His research focus on food emulsification and encapsulation. He has extensive experience in formulating new emulsifiers, extraction of surface-active molecules and encapsulation of highly volatile bioactive compounds. He also works on food safety and have excellent expertise in food safety and quality management systems. The secondary area of his research is delineation of novel bacterial communities from different food and waste resources. He is leading scientist in Pakistan who is also working on evaluating global burden of diseases from Pakistani communities. He published over 150 articles in highly impacted



research Journals with over 100 published proceeding in various food science and global health societies. He also provide technical help to Punjab Food Authority and Khyber Pakhtunkhwa Food Safety and Halal food Authority for establishing laboratories and standards.

4.8. **Engr. Mr. N. A. Zubairi.**

Mr. N. A. Zuberi is Gold Medalist from University of Engineering and Technology, Lahore in B.E and M.E Electrical Engineering. He is distinguish electrical engineer recognized both at national and international levels, his educational qualifications is backed by a rich power sector experience of more than three decades. He has worked during 1979-1987 with National Engineering Services Pakistan (NESPAK), a reputable consulting house in Pakistan, having later joined the Ministry of Planning & Development and served in the Energy Wing from 1987 to 1994. All along he has worked on the development & implementation of wide-ranging prestigious power projects. Since 1994 he



served Private Power and Infrastructure Board (PPIB) a pioneer institution handling private power projects. He was responsible for managing, coordinating and attending all intricate technical, commercial, legal and financial issues related to the development & implementation of private power projects from inception till commissioning and operation. He is king pin in implementing various power policies related to private power generation in Pakistan.

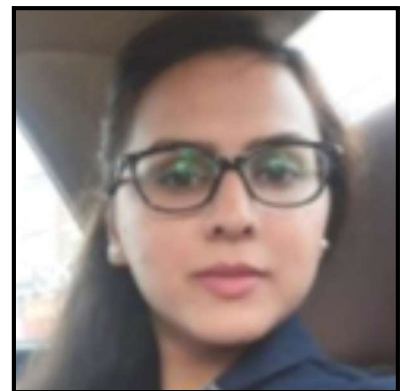
Mr. Zuberi played pivotal role in implementation of Power Policy 1994 as a result of his untiring efforts, professional acumen, exceptional hard and diligent work, PPIB was successful in adding 6000 MW of private power generation to the national grid in the shortest time line spanning from 3 to 4 years. Likewise, he has been actively involved in implementation of Power Policy 2002, his down to earth approach towards work and concerted efforts has resulted commissioning of 13 private power projects with a capacity of 2600 MW under Power Policy 2002. In addition Mr. Zuberi played a lead role in handling a large portfolio of private power projects which included hydropower, imported /local coal, and fast track projects etc. He has successfully handled projects through International Competitive Bidding in an efficient and transparent manner establishing an un-precedent success story for PPIB.

Mr. Zuberi is a repository of IPP knowledge in Pakistan, with his robust and deep knowledge he has been instrumental in facilitating, encouraging and attracting prospective investors in private power generation, he has largely contributed in the dissemination of incentives and concessions spelt out in various GOP polices and intricate concepts enshrined in IPP transactions.

Mr Zuberi is now serving as Senior Advisor/Chief Operating Officer (COO) in China Three Gorges South Asia Investment Limited (CSAIL) a wholly owned subsidiary of China Three Gorges. He is handling all crucial issues related to 1124 MW Kohala, 720 MW Karot , and 640 MW Mahal Hydro Power Projects and 3x50 MW Wind Power projects initiated by CSAIL and which are at various stages of development. He is the distinguished Pakistani who was awarded best Performance award by China Three Gorges in 2016 in recognition of his outstanding performance.

4.9. **Dr. Ms. Saba Fazal Firdousi.**

Dr. Saba Fazal Firdousi completed her Ph.D. in Economic System Analysis and Management from Jiangsu University, China and D.Phil. in Industrial Economics from Oxford University, United Kingdom. She is currently serving as Economic advisor in Pakistan Industrial Technical Assistance Centre, Ministry of Industries and Production and as research and teaching fellow at the School of Economics and Finance, Jiangsu University, China. She also served in Center of Excellence, CPEC under Ministry of Planning Development and Reforms. She is also a certified master trainer. Dr. Saba has the honor of being the youngest Ph.D. of Pakistan.



4.10. **Engr. Mr. Salis Usman.**

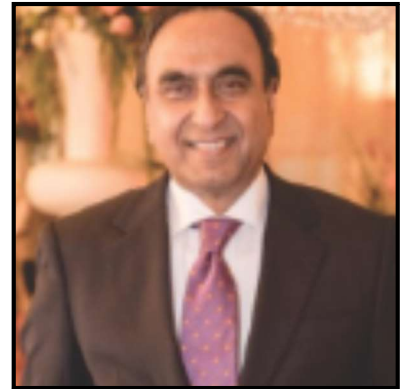
Engineer Salis Usman had done his Electrical Engineering in 1985 and then he joined WAPDA. He had worked on transmission and grid stations construction, designing and planning. He is now General Manager of National Transmission and Dispatch Company (NTDC), Pakistan. Engineer Salis Usman has a vast international experience of power system planning. He had headed the team for National



Load Forecast and Generation Planning and Indicative Generation Capacity Expansion Plan (IGCEP) preparation. Engineer Salis Usman worked for Saudi Electric Company as Senior Regulatory Analyst for five years, as Chief Engineer in Central Power Purchase Agency (CPPA). He had worked at the SAARC Energy Centre as Program Leader and Senior Research Fellow for Cross Border Energy Trade for five years. At SAARC Centre he carried out in-depth study of different issues related to cross border energy trade between SAARC member countries. His model has successfully been implemented by India.

4.11. Engr. Mr. Tahir Basharat Cheema.

Mr. Cheema is one of the former MD's of Pakistan Electric Power Company (PEPCO). Winner of WAPDA's Pride of Performance Shield. Mr. Cheema has more than 24 years of experience in Pakistan's power sector. During his tenure in the Power Sector, he conceptualized WAPDA International Technical University (WAPDA ITU) and implemented his concept as the Project Director / Rector of WAPDA ITU. As MD PEPCO, he played a critical role in mitigation of the ongoing energy crises. He had prepared and implemented Energy Management Modules for PEPCO and Energy



Conservation Initiatives for the Country. He had also developed a mechanism for Surveillance and Investigation of WAPDA operations inclusive of the Power and Water Wings. Mr. Cheema is an expert on power projects analysis and subsequent implementation work.

5. RECOMMENDATIONS & SUGGESTIONS.

5.1. National Economic Security.

- 5.1.1. Pakistan needs to develop a coherent and well-coordinated national economic security policy framework encompassing all sectors of economy for economic development and economic growth. This policy framework should be prepared in close cooperation with the private sector stakeholders to be effective and practical.
- 5.1.2. For economic development, which is the base of economic security, ease of doing business is the most critical factor. Unfortunately, Pakistan is in the lowest ranks among 188 countries and similar is the case for human development. We are at 120 out of 180. These are the two very basic areas which need to be focused on war footings. For this purpose the trade and industrial bodies should be involved and given the task to come up with the recommendations.
- 5.1.3. Develop conducive atmosphere with ease of doing business as the base, and convince the industrialists and investors from Golden Ring countries to have strategic economic investments in Pakistan.

We must start and enhance the exchange of experts in all fields from the Golden Ring countries and send ours to them to learn from them and for capacity building of our experts and students.
- 5.1.4. We need to develop a comprehensive strategy to engage with and enhance business connections with Golden Ring companies and organizations with private sector in lead and government as facilitator. GREF can play a major role as match maker and lobbyist.
- 5.1.5. Pakistan has a large SME sector plus a substantial cottage industry, these sectors play a major role in our economy. The linkages of these sectors with the Golden Ring countries should not only be encouraged but also be enhanced by facilitating them to develop them as export-led industry.
- 5.1.6. Agriculture is the major part of Pakistan's economy. After the 18th Amendment agriculture has been shifted to provinces resulting in 2000. National Agriculture Policy. In the absence of a combined National Agriculture Policy how can we talk about the national economic security.
- 5.1.7. Need to increase tax to GDP ration and reduce non-development administrative expenditures. Here it should be noted that we need to bring Education and health out of "non-development" head in our budget and financial planning. It should be in development expenditures head.
- 5.1.8. National Energy policy needs to be develop in the light of national economic security.
- 5.1.9. The idea of common currency for Golden Ring countries is workable and it strongly suggested that State Bank of Pakistan must constitute a small task force or working group to analyze it and formulate a comprehensive workable plan to come out of dollar and Euro dominance.

- 5.1.10. While going for FDIs we must also keep in mind the negative impacts of FDIs. For which we need to modify our policies in the national interest. We must deeply and thoroughly analyze the effects of increasing and decreasing FDI on GDP.
- 5.1.11. In the days of international recession due to Covid-19 pandemic, the first and foremost priority should have been to take measures to ensure survival, revival and growth in all sectors. Till today, no concrete steps have been taken by the federal and provincial governments for meeting this emergent situation. Resource mobilization should be given preference to build infrastructure, facilitate growth of small and medium sized firms in the industrial sector and small farms in the agricultural sector for an employment intensive and equitable economic growth process. In all these areas great scope exists with China, Iran, Turkey and Russia for achieving rapid growth, human resource development and a regional EU [European Union] style bloc.
- 5.1.12. There is still time for the Government of Pakistan, to realize that the iniquitous prescriptions of World Bank/IMF of high taxes, complicated laws and enormous cost of doing business will not solve our fiscal woes. These will bring more miseries as economy in recession cannot grow due to economic toll of Covid-19 pandemic. The viable solution is simple/low-rate taxes, reduce the huge tax expenditure by withdrawing exemptions available to the rich and mighty, give relief to taxpayers as they suffered heavily during lockdown due to Covid-19 pandemic.
- 5.1.13. If the Pakistan wants to adopt the path to prosperity as China did in the last few years, it must drastically cut wasteful expenditure, eliminate circular debt, get rid of loss-bearing public sector enterprises and improve efficiency and productivity in all sectors of economy. State lands, situated in the heart of cities, should be leased out for business and commercial ventures which would generate substantial funds, rapid growth and new jobs. For this joint ventures with all countries of Golden Ring countries (China, Iran, Turkey and Russia) should be the top priority.
- 5.2. **Regional Energy Grid and National Energy Security.**
- 5.2.1 Pakistan does not have any energy security plan and therefore, it does not have any fuel storage capacity as required strategically. We need to develop a proper energy security plan as well as an energy security policy framework also including cross-border options.
- 5.2.2. Pakistan urgently needs to develop alternate sources of oil and gas near to its borders and with land connectivity.
- 5.2.3. Iran – Pakistan gas pipeline should be extended to China making it a tri-country Iran-Pakistan-China Gas Line. By including China's interests, the security of pipeline will be enhanced on one hand and the threat of sanctions will be eliminated.
- 5.2.4. North-South Pipeline should be extended to China in the North and to Iran in the South West. Similarly, it should be linked to Gwadar.
- 5.2.5. A ring type network of oil and gas pipelines involving Azerbaijan, CARs, China, Iran, Pakistan, Russia and Turkey should be built by not only upgrading the

existing network but adding new spurs into it.

- 5.2.6. A Golden Ring Joint Energy Cooperation Council should be formed including Azerbaijan and CARs. This Council must consist of members from public and private sectors for policy framework preparations, a technical group and a financial and economic group. They must be tasked to develop a comprehensive policy framework for cross-border energy trade.
- 5.2.7. Pakistan must very accurately calculate its true demand for electricity, gas and oil for present and next fifty years so that different options could be considered in planning energy security plan. For this a comprehensive physical user market survey is need to be conducted.
- 5.2.8. We do have our Grid Codes but they do not cover cross-border interconnection options. Similarly is the case for standards, benchmarks, etc. Therefore, we need to develop cross-border interconnection benchmarks, codes, standards, etc. for all three electricity, gas and oil grids and networks.
- 5.2.9. We also need to study regional markets and their demand and supply patterns. India has very successfully launched and is using models of “ Web Power Exchange” and “Gas Exchange”, we need to study and learn from Indian success story.
- 5.2.10. We need to develop and add cheap and clean megawatts through indigenous resources and technology. Which means we need to develop local industrial and technological base for hydro and wind turbines, solar power equipment and PV, substation/transmission equipment and all allied equipment in Pakistan. For this purpose we need to make JVs with Golden Ring Countries to manufacture this equipment in Pakistan. In this way lots of standards and codes issues will auto- matically be resolved.
- 5.2.11. If Pakistan needs to benefit from cross-border energy trade then we need to increase energy conservation and energy efficiency on one hand and make our power grid and energy networks smart and sustainable on the other hand.
- 5.2.12. Pakistan is extremely poor in effective governance of energy sector, all what has been recommended above can not be achieved and wasted if we fail to ensure effective governance across this sector.
- 5.2.13. Pakistan has abundant Hydro, Wind, Solar, Coal resources and these resources to play dominant role in the energy mix of Pakistan.
- 5.2.14. For Energy Security, the resources, available in Pakistan, are needed to be transformed into Power (Electricity), so that it could be provided at affordable costs and while ensuring reliability and sustainability of supply, acceptability by the masses and diversity of energy resources with efficient development of the relevant institutions.
- 5.2.15. Golden Ring countries can play a leading role in the development of energy projects in Pakistan, utilizing the indigenous resources through private sector or in public sector entities
- 5.2.16. Golden Ring Countries need to utilize their natural resources for the Energy

Security through sharing of following:

- Experiences and lessons learnt for the development of natural resources.
- Institutional arrangements for the development of resources through Private Sector.
- Legal and regulatory Framework for fast track development of the natural resources.
- Policies to encourage private sector for the development of the natural resources.

5.2.17. For Energy Security regional Grid of the Golden Ring Countries and CARs is highly recommended so that the energy resources in these countries could be utilized efficiently for the betterment of the public and for shared energy security of the region.

5.3. National Food Security.

5.3.1 Wheat yields stagnation can be broken with a minimum annual seed replacement of 50% of a million MT required. Conversion from broadcasting method to seed drilling can bring a substantial improvement. Breeders need to replace Norin-10 dwarfing genes (high input requiring but lacking stress tolerance) with new GA-insensitive set of genes (stress tolerant and climate resilient). The race for release of new varieties could be slowed down by breeding durable rust resistance. There is business for seed and machine planting. Equally important is the replacement of current combine harvesters causing huge field losses. Breaking yield stagnation of wheat will not only address food security challenge but also offers space for Canola as a Rabi edible oil crop.

5.3.2. Cotton seed supply chain malpractice, pest pressure and competition with other Kharif crops require a new strategy for revival. Xinjiang model of dessert cotton production be followed using determinate varieties, machine planting and harvesting, mulching and drip irrigation. Relocation of cotton belt into Baluchistan has a great potential.

5.3.3. Soybean is a Kharif crop which needs urgent attention not only as an import substitution but also as a legume to restore soil health and fertility. Replacement of current Kharif crops is less likely to succeed but intercropping in Maize and Sugarcane is a high possibility. That can be done by proper varieties and mechanization. Soybean is a highly researched crop, being one of the top three grain crops in the world. Soybean can also be included as a mix in the silage corn crop to enrich animal feed and fodder.

5.3.4. Sesame is another Kharif alternative with as much of export potential as of rice but with much less water requirement.

5.3.5. There are several crops (Potato, Turmeric, Ginger, Banana, Sugarcane, Date palm, Strawberry etc.) which are grown using tissue culture seedlings/tubers commercially. Many vegetables and ornamental plants are grown from expensive hybrid seeds. There is a huge scope for the private sector to create a

seedling business of tissue culture plants and hybrid seedlings.

- 5.3.6. Collaboration in seed production with international partners (Chinese, Iranians, Russians) is a strong possibility. We already have a success story of Turkish (Yukshal) partnership in a select group of vegetables (Mian Shaukat at Mamokanjan). Similar partnerships in development of several other vegetables, food grains, rice, fruits, fodders, edible oil seeds and olive are needed.
- 5.3.7. Investment in training and capacity building of farmers and SMEs for value addition.
- 5.3.8. Mechanization through service providers, GIS, Remote Sensing, Drones, Image Processing, Sensors etc. Machinery manufacturing B-B partnerships with China, Iran, Russia and Turkey are strongly recommended.
- 5.3.9. The case of HEI should be debated and redesigned to make it success.
- 5.3.10. Promotion of homemade milk products and home grown vegetables as a Cottage Industry is needed.
- 5.3.11. Production of medicinal herbs for herbal medicine need to be supported and its export to be facilitated. China, Iran and Far East are very big markets.
- 5.3.12. Market reforms: Each commodity has a unique critical element or a value capture, deserving attention.
- 5.3.13. I have avoided discussion on fertilizer applications; the key word is balanced applications.
- 5.3.14. Peri urban agriculture is an unattended segment.
- 5.3.15. To increase crop productivity using soil conversation techniques. No till farming is one of the recommended methods, that not only increase crop productivity but also preserve the climate.
- 5.3.16. Herbal and spice cultivation on massive scale to increase economic value of produce since spice and herbal produce will have good economic value in China.
- 5.3.17. To train farmers on basic agricultural production techniques using cooperatives based farming that needs to be added in policy making part.
- 5.3.18. To focus on coastal areas of Pakistan. The harvesting and cultivation of seaweed will be best economical value for Pakistan and as well as adding new component in Agriculture sector. The seaweed addition in wheat flour will correct many micronutrient deficiencies and will put less burden on nutritional profile of Pakistan.
- 5.3.19. Intensive research activity should be undertaken with the help of Golden Ring countries for which a Golden Ring Advanced Agriculture Research Center on Methods, Tools, Policy and Innovations should be established. This Center should also have a section on All techniques in agriculture that is much needed for Pakistan to improve crop yield and mitigating climate change.

- 5.3.20. All Agriculture Departments of Pakistan, main and field offices, must have crop simulation tools. This will help farmers to decide proper crop cultivation time and timely addition of fertilizer. This will benefit to save land from degradation and also increase economic value of crops.
- 5.3.21. A lot focus is needed on the research of full food supply chain, farm to consumer, for which experience of Golden Ring and other countries should be studied to see how and what can be implemented and improved in Pakistan. This segment is poorly managed in Pakistan and deep intervention is needed.
- 5.3.22. For soil conservation “No till farming” has been successfully tested and tried in Pakistan and it is therefore, recommended to increase crop productivity and reduction of water use to almost 70%.
- 5.3.23. To train formers on basic agriculture techniques used in advanced countries through special field training centers.
- 5.3.24. Cooperative based farming for small land holders should be encouraged.
- 5.3.25. Large scale cultivation and development of medicinal herbs for export to be encouraged.
- 5.3.26. Cultivation and harvesting of seaweeds in the coastal areas should be developed on large scale for exports as well as local consumption. Seaweed addition in wheat flour will correct many micronutrient deficiencies and will increase the nutritional profile of Pakistan.
- 5.3.27. A Golden Ring Countries joint advanced agriculture research center should be established in Pakistan, where experts from all Golden Ring countries can work to counter the challenges of food security.

5. TRANSCRIPTS OF TALKS.

6.1. NATIONAL ECONOMIC SECURITY.

6.1.1. Mr. Abid Sherwani.

First of all, Assalamu Alaikum to all the participants, and especially our renowned scholar's speaker of this webinar Dr. Arshad Zaman sahib, Dr. Ikram UI Haq sahib, Dr. Saba Firdausi sahiba, and Dr. Numan Arshad sahib. We are organizing this very important webinar on the topic of National Economic Security for Self-Reliance. This webinar is part of the webinar series on contemporary issues being organized with the collaboration of the Golden Ring Economic Forum and the University of Management Technology, Lahore. We thank our partners from Golden Ring Economic Forum (GREF), who have worked determinedly with us to ensure the success of this event and UMT promises to continue playing an active role in increasing the awareness on the topic of political and economic importance. Today, we have engaged with us three schools from UMT, School of Business and Economics and Dr. Hafeez and his team is here, School of Governance and Society Janab Rahat ul Ain Sahib is here and along with his team, and School of Commerce and Accountancy under the leadership of Azeem Naz and their colleagues and my ORIC team is also here. And in the early session in this webinar series, we have already talked about pressing concerns such as the economic development and recovery, geopolitical and geostrategic importance of the Golden Ring Bloc.

Today we are going to highlight very critical issues of National Economic Security. National economic security is the ability to protect or advance economic interests in the face of evolving global circumstances and challenges. The most important determinant of a country's, national security is the health of its economy and its society. This means that national security doesn't only depend on military security but economic and political security as well. Our military has proved time and again that they are capable of defending our nation and we are all well covered on the military grounds. It is our economic and political security we need to focus on. The development of regional cooperation, as has been proposed by the GREF, is in the present times and looking at geopolitical situation in the region is the best option, if availed properly. Golden Economic Ring is an example of working towards enhancing our national security geo-strategically and politically. But we need to equip ourselves to be able to reap the economic reward of such development as well.

Today's webinar experts are tycoon in their respective fields and they will discuss these issues in greater detail and we hope that today's session will support further research on this topic amongst our faculty, students, other think tanks and stakeholders. I would like to thank all of my very determined ORIC team, my SB team and my SGS team, and the SCA team. I would also particularly, like to thank General Sikander Afzal, the Chairman of GREF and Mr. Mirza Hasnain Sahib, Founder and the President of GREF as they are a strong binding force behind all these activities. And in the future, we will also arrange many more serieses of webinars on the topics of current issues and challenges to the country with the spirit to boost our country to accomplish self-reliance in all aspects of life.

6.1.2. Mr. Hasnain Reza Mirza.

Salam-o-Alaikum everybody present here and in Iran, a very good afternoon to our

Russian friends and a very pleasant evening to our friends in China. Thank you very much our distinguished speakers, Dr. Arshad Zaman sahib, Dr. Ikram Sahib, Dr. Saba Sahiba and Dr. Nauman Sahib for joining us today.

Golden Ring Economic Forum is a policy research think tank working for the strategic economic cooperation between Pakistan, China, Russia, Iran, and Turkey. GREF was established as a registered organization back in 2015 and we have been working since then. GREF has achieved several milestones in the short period of time we have covered. GREF is in a quite stable position internationally, now we have quite good inroads into the top business, political and government hierarchies of China, Iran, and Russia. Therefore, we have been working jointly with all these countries for the economic development. GREF has launched several initiatives, some of which are, the Post-Corona Shared Economic Recovery between Pakistan, China, Iran, and Russia. We had a webinar series on that, a very successful one. Then we had the geostrategic part as the second series. Another initiative is establishment of Joint Media Association of the Golden Ring Countries. Similarly, we are also working on a trade system based on Barter Trade by forming a warehousing joint company (SPV) with the use of local or in certain common currency or something like that. Another initiative is, joint research and development in different fields. The concept is that whichever country is more active and more advanced will share its achievements and research with other Golden Ring countries for mutual benefits. And the last one is the development of a Regional Energy Grid of electricity, gas and oil. Pakistan is the most energy starved country within this region and among five Golden Ring countries, so it is in the interest of Pakistan to have such kind of regional arrangement. Since, some of the regional countries have one or other forms of energy resources with surplus whereas, others have shortage. So what we are proposing is that the regional countries share their energy resources with each other, under a certain mutually agreed upon mechanism, bilateral or multilateral, if they have some surplus energy. We can discuss the modalities and all the rest separately in other seminar or webinar.

Since, energy is the backbone of economy so national economic security requires energy security. We have to be secure on the energy side and this becomes even more critical when we see that a new axis of Arabs-Israel-India-US is developing around us in the region. So, we have a fear that most probably tomorrow someday our energy supplies from the Gulf Countries may be a become difficult as India, Israel and the US will try to squeeze us against China, Iran and Russia, the so called "Curtaiment Policy" or something else. So we have to find cost effective and reliable alternate sources of energy closer to home.

One of our main objectives is to ensure national economic security and economic development. In today's webinar we will try to address problems within our economic policies and system and how to put our own house in order. Second, how effectively we can involve these four countries China, Russia, Iran and Turkey and somehow make them invest in Pakistan with what we call strategic economic investments in our economy. Such strategic investments in industry and infrastructure will promote their interests in Pakistan resulting in strengthening and giving boost to our economy. Such joint ventures will not only develop our industry but also help in capacity building of our systems. We are also looking for views and expert's suggestions as how Pakistan can come out of shackles of international financial and monitory organizations like IMF and World Bank, come out of Euro and US Dollar, etc. Lastly, we would also like to seek your views on what if we negotiate with China to pay off our international loans and Pakistan then pays back to China partially in local currency and partly in commodities.

What we are looking from our distinguished guests that they give us their expert opinion and suggestions on all these points. GREF will compile and print, in the form of proceedings, all suggestions, once we are through with these webinars and send them to the concerned ministries, departments and other concerned quarters of the government. Once again thank you very much everybody and now, I handover to General Sikander sir.

6.1.3. Lieutenant General Sikander Afzal HI(M), (Retd.)

Dear friends, ladies and gentlemen Assalam-o-Alaikum and a very good afternoon. As Hasnain has mentioned I am the Chairman of the Golden Ring Economic Forum commonly called GREF. This is a think tank based in Lahore, Pakistan, and focuses on Economic issues and developments which affect Pakistan and how Pakistan can benefit from the evolving changing environment in the region surrounding Pakistan. The think tank is the idea of the business community of Lahore and focuses on ways and means to enhance economic activity between Pakistan and the Golden Ring Countries. One of the objectives that we the board of directors of GREF have laid down for ourselves as GREF is to lobby for and focus on ways and means to strengthen the economy of Pakistan primarily by enhancing trade and economic interaction between Pakistan and the countries of the Golden Ring namely Russia, China, Iran, and Turkey.

The most important contributor to the national security of a country is its economic strength. The colonial powers in the 17th and 18th centuries were able to rule the world, not because of military strength alone but their economic power. This enabled them to develop their military and at the same time bribe opponents who were willing to sell their countries for money. More economic strength meant better military to pursue their agendas. Pakistan has been dependent primarily on the West for its exports and the western economic system to generate funds for its growth. Pakistan now, in our opinion, needs to pursue other avenues especially closer to home like the Golden Ring Countries to enhance its exports and improve its economic situation. Today we have an eminent panel of speakers who will elude more to this area and we hope to benefit from their talks. I thank you for giving me the opportunity for being amongst you all.

6.1.4. Dr. Mr. Ikram Ul Haq

I am thankful to think-tank, The Golden Ring Economic Forum (GREF), and University of Management & Economics (UMT) for inviting me to share ideas on a topical and highly important subject as tilte of the webinar suggests: **"Regional Geostrategic Challenges: Golden Ring—An Opportunity for Pakistan's Strategic & Economic Security."**

The brochure of GREF sent before webinar provided necessary background and work done by the think-tank since its inception in 2015. The salient points, I want to recapitulate before giving my suggestions are as under:

- a) GREF has successfully conducted several meetings with high level officials from China, Iran and Russia confirming their acceptance of GREF idea and initiative.
- b) The objective of all this, is to jointly explore opportunities and possibilities for multilateral strategic economic cooperation in different fields and to find an answer to "HOW & HOW SOON". As a result of consultations with Chinese, Iranian and Russian embassies at Islamabad and high officials at their respective capitals, GREF has planned a few short term and long term initiatives covering different aspects of economic and national security.

- c) Some of the GREF initiatives are: a. Post Covid-19 Shared Economic Recovery jointly by China, Iran, Pakistan and Russia. b. Energy Security through Regional Energy Network (Grid). c. National Economic Security through Economic Investments of Golden Ring Countries in Pakistan. d. Establishment of Joint Media Association of Golden Ring Countries. e. Trade Security by Establishing "Joint Barter Chamber and Trade SPV" of Golden Ring Countries. f. Agriculture and Food Security. g. Development of Joint Advanced R&D Facilities in Engineering, Sciences and Technology.
- d) In the light of above, GREF has planned several rounds of webinars covering different aspects of national security. Two rounds of webinars covering Shared Economic Recovery, Defense & National Security and National Interests Based Foreign Policy have already been very successfully completed.
- e) According to GREF some very positive and productive result oriented discussions were held and all countries fully supported these initiatives and agreed to work together.
- f) Now GREF has planned the third series of webinars to discuss the topics keeping in focus the strategic aspects of the new grouping of these five countries--a the Golden Ring Grouping and how Pakistan can extract maximum benefits from it.
- g) There will be following three webinars:
 - i. Strategic Economic Security.
 - ii. Energy Security through Golden Ring Regional Energy Network (here energy means all forms, like electricity, gas, oil, nuclear, etc.).
 - iii. Agriculture and Food Security.
- h) Through these webinars GREF seeks to generate a discussion on the effects of the evolving regional developments around Pakistan and how Pakistan can adjust to the evolving opportunities in the short and midterm for its strategic economic security. How Pakistan can work with Iran and Russia circumventing US and Arab pressures? How Pakistan can ensure its energy security when KSA and UAE, the main sources of Pakistan's oil supplies, have signed defence and security agreements with Israel and India? Since, Pakistan is not willing to leave CPEC, nor its new friend Russia and is also not willing to go against Iran. Under this scenario they will squeeze Pakistan from every side, economy and energy is the most effective weapon.
- i) There is an eminent threat that India and Israel will exert pressure by disturbing oil supplies to Pakistan hence, crippling our economy. The discussions at this webinar are intended to specifically revolve around the issues related to national economic security.

6.1.4.1 NATIONAL ECONOMIC SECURITY FOR SELF-RELIANCE

- a. A country's self-reliance means its autonomy, independence and capacity of freely making its foreign and other policies and decisions. National economic security for self-reliance is crucial for Pakistan due to rapidly changing regional geo-strategic conditions around Pakistan.

- b. One of the present existing options available for Pakistan to stand on its feet is the economic security through international connectivity, partnerships and strategic economic investments in Pakistan. This will develop infrastructure and industry to stimulate economic development and growth resulting in economic stability and security.
- c. The new paradigm shifts of innovations in technology, manufacturing and supply-chain management (improved the products and services with growing consumer markets) have emphasized to influence the approaches of human capital management.
- d. Pakistan has the abundance of human resource but less of human capital as compared to other economies in the region and the World. The notion of "Economic Security for self-reliance" requires serious participation of all the segments of population by making them active and productive.
- e. The multi-sectoral cooperation mechanism for macro-stability ensures the better Human resource management policies in different industries.
- f. The collaboration with the Golden Ring economies for economic security will create new opportunities through higher investments in education, health, technological improvements and trade activities.
- g. Talking of international trade volumes of four Golden Ring countries, other than Pakistan, is over US\$ 5.00 trillion. Pakistan's share in this regional market is only 0.7%, whereas, some 65% of items imported by them are those which Pakistan has but not exporting to them. Pakistan's energy is mostly based on non-renewable energy resources which have further cost in case of environmental degradation.
- h. Pakistan's primary commercial energy supplies comprise of thermal power is highly depend of fossil fuels. Pakistan is an energy deficient economy, and has always been an energy importer. Russia and Iran are the main exporters of energy sources (oil, gas, coal and petroleum products) close to Pakistan. Pakistan may propose to them, under the Golden Ring bloc arrangement, to trade these on the basis of barter thus reducing its foreign currency balance of payments.
- i. GREF is seeking recommendations from the experts on:
- j. How best Pakistan can extract benefits for strengthening its economic security from the economies of Golden Ring countries?
- k. What policy changes and modifications are required in basic and on macro levels for achieving economic self-reliance and independence?
- l. To benefit from barter trade with Golden Ring countries what basic changes will be required on policy level?
- m. To come out of Dollar/Euro and IMF/World Bank Group shackles how best the Golden Ring bloc currency free or common currency concept can work?
- n. What national arrangements will best serve integrated strategic economic planning?

I feel that my humble input should be a simple but pragmatic blueprint to achieve all the

objectives suggested and proposed by GREF in holistic way and not in segmented manner that will never succeed.

We cannot achieve any object mentioned above unless we first put our house in order and come out of fiscal mess created during the last few years. Pakistan as a weak economic entity cannot achieve the objectives highlighted by GREF.

The present coalition Government of Pakistan Tehreek-i-Insaf (PTI) on assumption of power in August, after general elections held on July 25, 2018, contrary to its election promises, failed to undertake much-needed and long-delayed fundamental structural reforms in all institutions, especially administration, where singularly Pakistan Administrative Service (PAS, still better known as DMG) controls most of the key posts both in federal and provincial governments.

The highest judicial forum time and again in the last many years pointed out failure of successive Government came with tall claims of establishing egalitarian society and providing "justice" to all the very name of party means "movement for justice". However, it failed to provide resources and roadmap for reformation of obsolete and outmoded institutions, especially the judicial system.

No country has progressed economically without fixing its justice delivery system and improving all areas of governance. One cannot review or analyze the geo-strategic challenges and opportunity for cooperation assuring national security. The main challenge faced by Pakistan is only faulty fiscal policy that is destroying even otherwise a country called "Fortress of Islam" due to its nuclear capability and advance programme in missile technology.

Taxes are the backbone of a country's economy as these help to meet day to day expenses for running the government's machinery (which in our case needs rightsizing and reforms to be efficient), for developmental projects, for maintaining the profitability equilibrium of commercial enterprises to discourage monopolies and create a level playing field for all types of entrepreneurs, to enable equitable distribution of wealth so that the rich do not get richer and the poor, poorer. The generous tax exemptions, concessions, waivers and amnesties, especially to privileged ones and tax evaders/avoiders must end as these are destroying the entire fiscal system and retarding business growth/investment. The economic challenges faced by Pakistan are due to oppressive taxes, narrow base, amnesties, money and asset-whitening schemes huge tax expenditure and monstrous debt with ever-increasing debt servicing, poor social spending and high cost of running inefficient gigantic state apparatus are all interlinked in Pakistan.

Foreign lenders/donors and so-called aid agencies try to further overburden us with loans to reform the tax system but never ever admit that it is not possible in a society where defying rule of law is a national character and expression of power and control. "Dispensation of justice is the main pillar of democracy" and there is a consensus that delivery of justice is our weakest area.

In Pakistan, successive governments have been always very keen to make efforts (though remain unsuccessful) for enhancing tax revenues, especially collection by FBR, but never talk about the real problem that is huge tax expenditure and monstrous size of unproductive expenses and absence of regional trade and initiative with golden ring countries. If these two are reduced even by 30%, Pakistan can substantially decrease fiscal deficit nearly 40-50%. The cost unprecedented tax-free perquisites and benefits

available to high-ranking state functionaries cost loss of billions of rupees to the national exchequer [tax exemptions and concessions of Rs. 30 billion were given to the top civil and military officers and judges of superior courts on perks and benefits in the tax year 2019]. In the face of this reality, we keep on hearing from every government that it is cutting “unproductive” expenses and withdrawing tax concessions to improve fiscal management.

The Government could not reduce wasteful, unproductive expenditure by right-sizing and revamping loss-bearing PSEs. It only resorted to patchwork here and there, thus, fiscal years 2019-20 witnessed obtaining record loans, external and internal, no privatization or revamping of PSEs, ending of circular debt, meaningful efforts to cut unproductive/wasteful expenditure. On the contrary, further regressive taxes were imposed and in two years tax exemptions/waivers/concessions amounted to Rs. 2.12 trillion—those were sufficient to create connectivity through rail and roads with China and Iran.

In the pre Covid-19 era, the poor fiscal management, wrong economic policies, and adoption of failed strategies pushed the country into stagflation leading to recession, high inflation unemployment, closing down of industries/businesses leading to job losses, high interest rates and extremely low growth. It also created disappointment and despair in general public. The reasons for sluggishness in business and lack of any further investment, among many other factors, have roots in oppressive taxes and highly anti-business behavior of FBR and ever-increasing cost of running State machinery.

The Government lacked a roadmap to fulfill its election promise of collection Rs. 8 trillion. On the contrary, FBR's target was reduced by Rs. 169 billion, reduction of 3.5% over the original target. The shortfall of Rs. 606.5 billion in collection led to historic high fiscal deficit of 8.9% of GDP leading to unprecedented indebtedness! The Government had nine months in FY 2018 – 19 for initiating reforms for revenue mobilization both tax and non-tax – but its economic managers did not bother to implement even its own tax reform agenda unveiled/promised during election campaign.

FBR in Statement of Estimated Tax Expenditure of Federal Government has admitted that out of total tax expenditure of Rs. 1150 billion in tax year 2019, sales tax was highest at Rs. 519 billion (45%), followed by income tax at Rs. 378 billion (33%) and customs at Rs. 253 billion (22%). It was 30% of FBR's total tax collection of Rs. 3828 billion and 3% of the Gross Domestic Product (GDP). In fiscal year 2018-19, fiscal deficit was 8.9% of GDP (Rs. 3.45 trillion) and for fiscal year 2019-20, it was 8.1% of GDP (Rs. 3.37 trillion). Had tax expenditure been curtailed by 50% (Rs. 500 billion) and wasteful expenses at 40% (Rs. 400 billion), the fiscal deficit of GDP for both the years would have been around 6% of GDP. It was 6.5% in fiscal year 2017-18. The Government incurred “tax expenditure” of Rs. 1149.95 billion in FY 2019-20 and Rs. 972.4 billion in FY 2018-19 (total of Rs. 2122.35 billion (shown in Annex II of relevant Economic Surveys), but ignoring impact of asset-whitening schemes of 2018 and 2019 and many other items which FBR in “Statement of Estimated Tax Expenditure of Federal Government” says could not be quantified for lack of data! The total tax expenditure, according to independent estimates, was not less than Rs. 3 trillion.

Instead of blaming FBR's officials alone for inefficiency, the Government must admit lack of will to reduce exemptions, concessions, waivers and amnesties to powerful segments of society. If only 40% of taxes waived/forgone in fiscal year 2019-20 were recouped in Finance Act 2020, there would have been a fiscal space of Rs. 600 billion to reduce taxes.

But the Government, showed apathy towards the weaker sections of society and small and medium enterprises (SMEs), facing the unbearable toll of Covid-19 outbreak/lockdown, by not reducing exorbitant sales tax, withholding taxes, advance tax, and high cost of utilities as well as oppressive 12.5% advance income tax from mobile users, no matter whatever their quantum of income. The latest data available on the website of Pakistan Telecommunication Authority (PTA) shows the total cellular subscribers as on December 31, 2020, 176 million, out of which 91 million are 3G/4G subscribers, 3 million basic telephony users and 93 million broadband subscribers. In the presence of such confiscatory taxes, Parliament gives tax amnesties, immunities and waivers to the rich, tax evaders and looters of national wealth or Presidential Ordinances of extending tax benefits are issued for the mighty developers and constructors. They all are also paying 19.5% sales tax on services to provinces and 17% Federal excise duty, if based in Islamabad Capital Territory (ICT).

In the Finance Supplementary (Second Amendment) Bill of 2019 presented on January 23, 2019 once again no steps were announced for making FBR efficient, simplify taxes, making them fair, low-rate and broad-based to harness the real potential, drastically reduce wasteful expenditure and accelerate growth. In budgets for FY 2019-20, presented on June 11, 2019, and for FY 2020-21 on June 12, 2010, burden on business and common citizens increased manifold by enhancing indirect taxes, while extending asset-whitening/amnesties/exemptions/waivers/immunities to the rich and mighty.

FBR admitted before the Standing Committee on Finance & Taxation of National Assembly on November 7, 2019 that governments of Pakistan Muslim League (Nawaz) and PTI in their amnesty schemes of 2018 and 2019, respectively, extended benefit of Rs. 61.4 billion to 191 billionaires, caught concealing undeclared/untaxed offshore assets. FBR revealed that definite information was available against them under Automatic Exchange of Information (AEOI) initiative of the Organization for Economic Cooperation and Development (OECD), yet amnesties were given keeping their names “confidential”.

For Pakistan from national security point of view, besides from external threats from two neighbors, India and Afghanistan, the internal formidable challenges are on the fiscal front for 2021, these are not limited to revival of economy amidst rising human and financial toll of Covid-19 pandemic, but also how to manage mounting debt burden and meeting revenue targets fixed for the fiscal year 2020-21.

It is high time that the federal and provincial governments chalk out a national plan for long-overdue second Green Revolution in Pakistan by increasing productivity and quality, reducing costs and establishing agro-based industries capable of meeting local demands and producing value-added exportable surplus and enhance trade with Golden Ring Countries. Our emphasis should be on growth, productivity and enhancing exports through diversification and value addition. The IT sector is highly ignored and heavy taxation of telecom sector is proving to be anti-growth.

Managing high fiscal deficit coupled with massive debt burden is the toughest challenge faced by our economic managers in 2021. The obvious and undisputed solution is substantial increase in resources and drastic reduction in spending. For the last many decades, Pakistan's fiscal policy has remained under immense pressure owing to perpetual failure of underperformance of FBR, continued security related outlays, rise in wasteful expenditure and greater than targeted subsidies, losses of PSEs, circular debt,

especially in the energy sector.

In the days of international recession due to Covid-19 pandemic, the first and foremost priority should have been to take measures to ensure survival, revival and growth in all sectors. Till today, no concrete steps have been taken by the federal and provincial governments for meeting this emergent situation. Resource mobilization should be given preference to build infrastructure, facilitate growth of small and medium sized firms in the industrial sector and small farms in the agricultural sector for an employment intensive and equitable economic growth process. In all these areas great scope exists with Iran, Turkey, Russia and China for achieving rapid growth, human resource development and a regional EU [European Union] style bloc.

There is still time for the Prime Minister to realize that the iniquitous prescriptions of World Bank / IMF of high complicated to and cost of doing business / IMF of high taxes, complicated laws and enormous cost of doing business will not solve our fiscal woes. These will bring There is still time for the Prime Minister to realize that the iniquitous prescriptions of World Bank / IMF of high complicated to and cost of ring business/IMF of high taxes, complicated laws and enormous cost of doing business will not solve our fiscal woes. These will bring more miseries as economy in recession cannot grow due to economic toll of Covid-19 pandemic. The viable solution is simple/low-rate taxes, reduce the huge tax expenditure by withdrawing exemptions available to the rich and my mighty and give relief to taxpayers as they suffered heavily during lockdown due to Covid-19 pandemic.

If the Government wants to restore Pakistan on the path to prosperity. It must drastically cut wasteful expenditure, eliminate circular debt, get rid of loss-bearing public sector enterprises and improve efficiency and productivity in all sectors of economy. State lands, situated in the heart of cities, should be leased out for business and commercial ventures which would generate substantial funds, rapid growth and new jobs. For this joint ventures with all countries of Golden Ring should be the top priority.

For progressing, Pakistan must end anti-growth/anti-business taxes dismantle all elitist Structures and empower masses at grass root level by implementing Article 140-A in letter and spirit ensuring social service delivery and prosperity for masses. No other plan will work, including the recent \$ 400-million loan from World Bank for Pakistan Raises Revenue Project by the Federal Government and following its footstep the Punjab Government also decided to borrow \$304 million from the World Bank for tax reforms. Such loans, though not at all required, are being taken when debt-to-GDP ratio reached an alarming level of 87.2% by June 30, 2020.

By now, it is not a dispute that there exists a “Grand Design” – New Great Game – aimed at sabotaging Belt and Road Initiative (BRI) and keeping South Asia and Middle East in turmoil. The ultimate aim is containment of China. The rise of extremism and militancy in the entire area, including Modi-driven Hindutva ideology and genocide of Muslims in Indian held Kashmir – all are part of the **New Great Game**. The forces behind this **New Great Game** want to make a nuclear Muslim State – Pakistan – economically subservient on the IMF and World Bank.

Our defense analysts and political historians have yet not examined the real target and objectives of New Great Game. It is the time that GREF must work with all Golden Ring countries to counter this immediate threat and build a bloc to defeat the forces of terrorism, bigotry, extremism, fanaticism and fascism, which are part of the **New Great Game** aimed

at dividing the Muslim World on sectarian and other bases, controlling South Asian and Central Asian resources using the bogey of militants, BJP-supported-Hindu extremism, and terrorist-cum-separatist outfits, working to create hurdles in China's Belt and Road Initiative (BRI), in which China-Pakistan Economic Corridor (CPEC) is a flagship project. In BRI, the Golden Ring countries must become stakeholders and this will ultimately lead a hub of prosperity and vanguard of peace in the world.

Just for the information of our students I will give them a brief of IMF Agreements from 1958-2019.

Since, 1958, Pakistan signed 16 programmes with IMF. On December 8, 1958 the military government signed one-year Standby Arrangement (SBA), which it terminated prematurely in nine months. The second SBA was signed on March 16, 1965 and concluded on March 15, 1966. Yet another one-year SBA completed on May 17, 1973. The fourth SBA, signed on August 11, 1973, ended on August 10, 1974. The fifth one was on November 11, 1974 and concluded on November 10, 1975. The sixth was signed on March 9, 1977. It was terminated exactly after one year. On November 24, 1980, an Extended Fund Facility (EFF) was concluded which lasted for three years – ended on November 23, 1983. After a gap of five years, two simultaneous programmes, Structural Adjustment Facility (SAF) and SBA were signed on December 28, 1988. Both continued beyond the agreed timeframe and ended in 1990 and 1992, respectively. The ninth programme, again a one-year SBA, was signed on September 16, 1993 but was terminated prematurely on February 22, 1994. The 10th programme comprised two separate facilities – SAF and EFF – signed on February 22, 1994 for a period of three years. However, both the facilities were terminated much before maturity on December 13, 1995. The 11th SBA was signed on December 13, 1995. It ended on September 30, 1997. The 12th programme was of two separate facilities, the Poverty Reduction Growth Facility (PRGF) and an EFF. Both were signed on October 20, 1997 and continued until September 30, 2001. The 14th Extended Credit Facility/PRGF was signed on June 12, 2001 and terminated on May 12, 2004. A three-year SBA was signed on November 24, 2008 but was prematurely terminated on September 12, 2010 after Pakistan could not initiate tax and energy reforms. The PML(N) signed agreement in September 2013 and successfully completed it on August 4, 2016. Under the PTI Government, IMF Executive Board approved the 39-month-\$6-billion EFF on July 3, 2019. Thank you very much.

- **Mr. Hasnain Reza Mirza**

Thank you Dr. Ikram sahib. One thing I would, once again, like to request to our speakers is to kindly focus on the solutions of the problems rather than only discussing the issues which is the purpose of this webinar. Now let me request Dr. Saba Firdausi if you please give your comments and suggestions. Dr. Saba Firdausi is an advisor to PITAC. If I am not wrong Dr. Saba has studied almost in every top school in Turkey, US, Russia, UK, etc. She has done her Ph.D. from China and she was the youngest Ph.D. of Pakistan. Dr. Saba please over to you.

6.1.5. Dr. Saba Firdausi

Assalamu Alaikum everyone, I really appreciate and the beautiful concept that is under discussion today and that is one of the most important things that needs primary attention at the government level and at the individual level as well. So my concept or how I perceive the National Economic Security of Pakistan: a path to self-reliance, is based on the Sacred Triangular Nexus in which I believe and that is economics, politics, and national security

they are inseparable. So as most of us have a viewpoint that Politics and economics are inseparable. I believe that economics and national security are also inseparable. From the global historical perspective, we have seen that economy was, and is the key political battleground. A parliamentary democracy lives from the relation between parliament and government. The opposition's main role is to question the government and hold it accountable.

But unfortunately, in the present scenario, all of the above is not practiced in Pakistan so these are the main issues. So before, I proceed to the answer that, let me have a brief outlook that has already been discussed by Mr. Dr. Ikram. But let's have a quick outlook. Currently, 64 percent of Pakistan's population is younger than 30 years. We have more Young people than ever we had. Pakistan is ranked one of the youngest countries in the world. Pakistan's coal reserves are estimated at 175 billion tons. Gas reserves of 885 billion cubic meters. Pakistan's hydropower potential stands at 90,000 MW (of which only 7,500 has been developed). Pakistan has one of the largest irrigation systems on the face of the planet. Pakistan is the second-largest pea producer. Pakistan is the fourth largest cotton producer. Pakistan is fourth largest sugarcane producer. Pakistan is fifth largest milk producer. Pakistan is sixth largest date producer. Pakistan is eighth largest wheat producer. Pakistan have iron ore, Cooper, gold, limestone, and salt. Pakistan is strategically located between South Asia, central Asia and the Middle East. We have an 814km coastline. But beside these blessings that Pakistan have and due to political instability in Pakistan, we are ranked 152 out of 189 countries in the Human Development Index. Pakistan is ranked 120 out of 180 countries on the Corruption Perception Index. Pakistan is ranked 108 out of 188 in the Ease of Doing Business Rankings. Pakistan is ranked at 141 out of 201 in the Freedom of the Press Surveys. Pakistan is ranked at 110 out of 141 in the Global Competitiveness Report. Pakistan is ranked at 119 out of 147 in the Global Opportunity Index. Pakistan lies in a low and middle-income country and at the moment it is roughly between 0.3 to 0.4 that is 0-1, least to most advanced globally. So Pakistan is somewhere mid-way that is not most advanced globally. In the terms of commitment that open and accountable governance, inclusive development, economic policy Pakistan is also on a lower level, likewise is the case for the Government capacity, Citizenship capacity, capacity of the economy and civil society capacity. It is not that advanced it is rather moderate level advanced. So, we have to learn lessons from the modern history to move toward the path of self-reliance. From the modern history of Wars in the region and the Soviet invasion of Afghanistan, it reminds us that mere nuclear capability, without economic security, is not enough for defense of a country. Former Soviet Union had thousands of nuclear weapons, missiles, and latest warheads but it collapsed without firing a single shot despite having all the might of the WARSAW pact and latest weaponry in its hands. The Soviet economy collapsed like a house of cards and as a result, the world changed from the bipolar to unipolar phenomenon.

So, based on these ground realities, we have to address questions in a way that how best Pakistan can extract benefits for strengthening its economic security from the economics of Golden Ring countries which include China, Russia, Iran and Turkey? And how to benefit from barter trade with Golden Ring countries and what basic changes will be required on policy level? So, what are the benefits if we strengthen our economic security with this Golden Ring Economic Bloc? It will improve the trade, transactions and employment opportunities from the economic perspective. By easing and enhancing trade and exchange of local Pakistani talents with Ring Bloc countries we can improve our capacity and expertise. For instance, with the establishment of CPEC under Belt and Road

initiative, Pakistan has been offered many talent scholarships and many Pakistani students got these opportunities and now they are being hired in different concerned Ministries and other organizations, public and private, for comfortable work environment. So, the similar pattern can be applied on other Ring Bloc countries like we can exploit the talent scholarship in Russia, Turkey and also in Iran.

CPEC Authority has recently formulated, its aims to supervise and put into operation CPEC projects and guarantee that Gwadar and its free zone are also granted with required tax and tariff concessions. So by the same concept of CPEC Authority, it is suggested that similar type of organizations should also be formed with the Ring Bloc countries in which they can have an easy run of cooperation, execution of the projects that could be of benefit to them and Pakistan. Moreover, Special Export Processing Economic Zones, the collaboration with Ring Bloc countries are vital for us. It is also suggested that the CPEC Authority should not only bound itself supporting business and investment between China and Pakistan but it should also guarantee exports growing programs with imperative areas all over the world specially with African countries, the US, European Union and all other Ring Bloc countries.

So, my suggestion is that there should be a comprehensive strategy to engage with and enhance business connections with Ring Bloc companies and organizations not only at the government level but also by private sector. For this purpose, GREF can play a major role as the facilitator, match maker and the lobbyist. Looking at the imports of China, Iran, Russia and Turkey one can easily realize the huge potential of exports to them from Pakistan in different areas. So what policies changes and modifications are required in the basic and all macro-level for achieving economic self-reliance and independency? So, I have four suggestions that how it could be done based on my research and based on the Pakistani imperatives and background. We need to have accelerated growth in small and medium scale industrial and commercial sectors therefore, we need to focus ourselves on the small and medium scale sectors. In case of small scale, Pakistan has roughly 3.3 million economic establishments of which 90 percent employ less than five workers and another four percent between 6-50 workers so major concentration towards the small-scale industries. So there should be an active policy of support and facilitation to this sub-sector through organizations like Small and Medium Enterprise Development Authority (SMEDA) to stimulate investments for growth and much needed employment in this sector. Technical Education and Vocational Training Authority (TEVTA) can play a major role in preparing youth in trades for their self-reliance.

The provisional governments can play a predominant role in promoting entrepreneurship by supporting larger firms in providing marketing channels and technical assistance to smaller firms especially by opening a pathway towards Ring Economic Bloc. Then you should have a bold program of incentives and policies for an export-led growth strategy. These incentives should prioritize the value addition in textile and other sectors because at the moment Pakistan textile sector is booming. There should be a strong partnership alliance with exporters' associations to find new markets for value-added products and special fiscal and credit policy. Credit support should be given to them then there should be traction for foreign investment from the Golden Ring bloc countries in agriculture and livestock sectors as well because Pakistan being an agricultural economy can get benefit in this sector as well. Many of the countries need a supply of items like wheat, rice, poultry, meat, edible oil, flowers, fruits, and vegetables. Based on my personal experience from China and my experience in Russia, I believe that if we specifically focus on these

agricultural and livestock sectors in Pakistan, we can have a lot many attractions for the Golden Ring Bloc countries.

The policies are required to achieve economic self-reliance in the traditional area of fiscal deficit, inflation, and monetary policy but not for non-traditional policies. There should be measure to increase how it could be achieved. There should be measure to increase the tax-to-GDP ratio and to reduce non-development expenditures. No doubt, this deserves high priority to narrow the gap between revenue and expenditure, but there is also a dire need to seek a balance between growth and macro-economic stability. Likewise, we need to continue current efforts to control inflation through tighter demand management and higher interest rates; we might reach what the late Dr. Mahbub Ul Haq called "the equilibrium of the graveyard". It should be possible to devise a discriminatory credit policy that promotes industrial growth, exports, and employment generation along with an energy policy. Because at the moment, our textile sector is booming but at the same time we have the higher concerns of the energy policies as well and the sector as well. So, we have to provide a surety that electricity and gas to these sectors are available at affordable prices. And unless we take such steps to reduce the cost of doing business in Pakistan, our growth will remain low and the problem of poverty and unemployment will become even more explosive.

So to eradicate our basic problems we need to devise certain corrections or modifications in traditional as well as in non-traditional policies so that it could make a comfortable environment, a conducive environment for the business community here, not only here in Pakistan but also for the foreign investors. There's a very relevant point identified by Dr. Ikram Ul Haq about the taxation policies that are quite weak here in Pakistan that needs emergent attention. So that foreign investors become comfortable while investing and coming here in Pakistan.

Now fourthly, economic self-reliance has to become a political imperative as well because if properly pursued can overcome the sense of political and social anxiety which has descended on the nation like a dark cloud. At the moment, political instability scenario that our country is undergoing has a major impact on our economy at an individual level and at state level in addition to the Covid-19 situation. The political instability and political scenario is the clouds for us. So, what is needed is a message of hope that we can refill the confidence and trust of the people and enthusiasm of local and foreign investors. This is very much important to regain and boost the confidence of the investors both at local and foreign level.

Now another question that was being posed is that how to come out of Dollars/Euro and IMF/world Bank Group shackles how best the Golden Ring Bloc currency free or common currency concept can work? So this is a very valid question to formulate. So far there is no common currency concept that has been introduced. So to formulate the Golden Ring Bloc currency the concept upstages the U.S. dollars unless the following scenario happen. These following assumptions are needed to formulate a common currency. One is that the Central banks of Golden Ring countries choose to keep, say a total equivalent of at least \$70 billion worth of Golden Ring Bloc common currency in foreign exchange reserves. The Golden Ring Block, Central Banks formulation that allows free trade of the common currency and relaxes its peg to the U.S dollars. The Golden Ring Bloc Central Bank becomes straightforward about their future intentions with the common currency. Golden Ring Bloc financial markets turn transparent. Golden Ring Bloc monetary policies are

perceived as stable. The common currency acquires a reputation of stability which is backed by the enormity and liquidity like the U.S dollar from U.S. Treasury. So these are the main assumptions that are required if to formulate or to introduce the concept of common currency through the Golden Ring Bloc. It is very good concept if it is formed, it is going to benefit a lot. So, how it is going to benefit once if it is formed so by having the common currency, it would be used to price more international contracts. Golden Ring Bloc can export a lot of commodities that are traditionally priced in U.S. dollars. If they will be priced in common currency, Golden Ring Bloc would not have to worry so much about the dollar's value.

So, all Central Banks would have to hold common currency as part of their foreign exchange reserves. The common currency would be in higher demand. That would lower interest rates for bonds denominated in common currency. So, it will benefit the exporters of the Golden Ring Bloc by having the lower borrowing costs. It would have more economic clout in relation to the U.S. and it would support the Golden Ring Bloc economics reforms or economic assumptions. So to formulate the common currency, I believe that there are certain assumptions that need to be executed and once the common currency is actualize being formulated then these are the main benefits that all the countries involving the Golden Ring Bloc can benefit at large. So, it is a good concept and I recommended that such policies should be a device in which this concept will be evaluated and formulated. Now, what national arrangements will best serve integrated strategic economic planning? It is something very close to my heart, because to develop a strategic economic plan it is very much important to achieve something measurable, sustainable economic growth and quality of place. Since, these three components are the key but how do you create a strategic economic development plan? This is something very fundamental and that is of importance that our policymakers and our institutes here in Pakistan should become familiar with. So where should they begin? Every political arena or new ruling government have their own plans but I believe that Pakistan needs economic reforms or strategic economic reforms and planning at the grass-root level. So that political parties or the people coming in the future must have something in hand to follow. Now, how can you make sure your plan is actionable? There are five steps that I believe could be helpful; first of all, policy makers of Pakistan need to accept that the Country needs a formal economic development strategy. At the moment, every passing government or every ruling government put the question mark on the previous government or allegations on the previous government that they have done this, this, this wrong and our government is going to do this and we have the best of the best. But in reality, until now there does not exist any conclusive or cohesive planning and nor is being done that can have the better effect on the economy not only in the shorter term but also in the longer term.

So there needs to be acceptance that we don't have a formal and proper sustainable economic development strategy and Pakistan need to devise it. So once it is devised, then as step two, then a team of six to twelve key stakeholders should be formed to thoroughly analyze it. I would also suggest that it should not only incorporate the influential and elected people, but an important component that I have highlighted is to incorporate the religious people as well since, they enjoy a strong and a major influence at every level of our society. Then in step three, I believe there should be economic development framework with the values, vision, mission, strategies, objectives that are executable with the processes and methodology that is easy to understand, implement, monitoring, evaluation and reassessing. Once the plan is formulated, it should be implemented, it should not just be the theoretical in nature or it should not be development of the report but

there should be proper monitoring that the plan is implemented and we should keep on updating it every three years based on the field experience. Similarly, with the passage of time and with the changing circumstances, geopolitical and geo-economic, we should keep on updating and formulating our strategies in a better way that could help Pakistan and the Golden Ring Bloc countries holistically. Thank you and if any questions I will answer them.

6.1.6. Dr. Nauman Arshad

The topic that I'm going to talk today is regarding the economic action towards self-reliance. So it is more dedicated to answer one question rather than the four questions that were given in the working paper. So, I will talk on the policy changes that are required for achieving the economic self-reliance. In this presentation I will focus on how we can measure the change and movement towards the self-reliance. So, before starting I will try to complement what Dr. Saba talked about regarding few potential indicators that she has mentioned from the economic outlook and these are the actual gaps that we need to fill and there also lies the actual potential that we can tap to achieve self-reliance. So, first of all I will give you some idealistic definitions that may help you to understand what does self-reliance mean? Self-reliance is "satisfying national needs ourselves" so don't go outside looking for help from others enjoying indigenous knowledge. So we have knowledgeable people and try to use that knowledge, optimizing production for national resource portfolio. Which means that for example, if we are labor abundant nation so we should focus on capacity building of human capital or labor-oriented functions, nurturing national heritage, culture, language, religion and so on. Our self-reliance will be when we are actually nurturing our heritage rather than going for the social globalization. Let us also adopt what is discussed in literature as global village.

First of all, we have to make sure our culture and heritage is strong enough to mix with others just like many other countries they focus on their national language so that they can rely upon to it. Then not to be dictated by other countries to deviate from national values. If we do not have self-reliance we will be dictated by others regarding our national values that if you want to live with dignity then you should change them, they bad or outdated, we should adopt and live according to their values if we are to be known as a civilized nation. The major outcome is when you are self-reliant you don't have a debt with others, you don't have to owe others and therefore, you don't have to follow their policies and rules. If we are self-reliant, then we can have dignity and honor which is the ideal thing that is needed for Pakistan as a nation.

My research work was related to the Foreign Resource Dependency, and I am actually presenting a few of my research papers joined together to address the question of how to achieve self-reliance. Pakistan, as a nation is focused on the foreign resources as a way out so it's actually a foreign resource dependency. Theoretically, many studies focus on that FDIs have a positive role on an economic development but many studies also concluded that the results of FDIs are non-conclusive because some countries don't have a positive effects or not even insignificant negative effects. The problem is that not much literature is available which may give any solid reasons as to why it's positive or negative, all they are talking is inconclusive. Further, in the literature not much emphasis has been given that if the resources are coming from abroad are they coming naturally, organically or we are pulling them. So it means if we are pulling them home it will take some effort we call it interest premium which we have to pay, extra and in addition, to pull them home. But if they are coming by themselves or coming by gravity, then it will be very good for us. So in

such cases instead of focusing on what FDI is doing or how it will be beneficial we should focus on what factors are pulling them. So that is what I am trying to focus here. So keeping in view this discussion my presentation will be focusing on the asymmetric effect of FDI for the case of Pakistan and then the second model is for the case of African countries. Now, how the FDI is effecting Pakistan. So my synthesis was that the FDI could have positive or negative effect and there are several theories that are scattered around the literature that focus on the positive or negative effect.

For the positive effect, I will focus on the perception of the foreign expertise and the latest technology that is being brought via FDI, the role of efficiency and productivity that we link to FDI that they are more efficient businesses and more productive models. But there are many harmful effects that come with FDIs, one is the pollution heaven hypothesis that a country like Pakistan likes to invite big firms. Actually, they do not come to Pakistan because it is investment heavens but they usually come because Pakistan has very poor record of implementing good environmental laws to cater the green production so they come here to avoid the rules and regulations in the developed countries. Secondly, when focusing on the foreign knowledge we are ignoring the indigenous knowledge and the indigenous knowledge always gives you an edge during implementation, the local bottleneck or local issues are better dealt with indigenous knowledge rather than if emphasize is on foreign knowledge.

Then if the national investment structure is more conducive and more relying on foreign investments then the risk of capital flight will be very high. Thirdly, for inviting FDI you need to pay higher interest premiums. For a country like Pakistan where we are not able to earn high premiums, from where this money is going to come? What will happen, since we have to pay them higher, it will come from the wages of poor people who are working for those companies or the people who are working in Pakistan.

Another case is of capital intensive production, so when we invite foreign knowledge they come with technology which focuses on capital intensive businesses with far less human involvement. Since, the Pakistan has a large unskilled or semiskilled labor, most of them, if not all of them, will be unemployed which means that the state has to create extra means and ways of giving them employment and ensuring their livelihood resulting in a huge economic and financial burden on the government. And lastly, if we mainly focus on FDIs, we will have a lower economic freedom because we cannot have strong or effective control over the multinational companies (MNCs) that are coming from abroad. These multinational companies in the form of FDI always have a major share of the market and therefore, they start controlling the market becoming big monopolies and economic mafias.

My conclusion is that why we are not growing is, because the negative force is dominating especially for the case of Pakistan. I have created two models in my two different papers and I shall try to synthesize the results from these two models. First model deals with the effects of increasing and decreasing FDI on GDP while controlling domestic investment and banking sector development. I have simulated that FDI into two forms when FDI is increasing LFDI plus and when FDI decreasing LFDI minus. Second model is also the same but we start with FDI plus, FDI minus where GFCF is capital, LLF is labor. I have made it a moderating model where I multiplied the FDI with banking sector development and financial sector development. So I used asymmetric effect ARDL model to see what is the effect of increasing FDI and decreasing FDI. Theoretically, by decreasing FDI in Pakistan, we think that foreign knowledge is more beneficial. But luckily when I see the first

model that the solid black line is the effect of increasing FDI, it has a positive effect till five years, after five years it smoothens out but still it has a positive effect. The maximum it goes to is 3.5. So this is the maximum positive effect that you can get out of increasing FDI. On the other hand, the black dashed line is the effect of decreasing FDI so you can notice here is that for six years there will be some cyclic effect but it's still positive it is above zero after that it goes beyond the increasing FDI levels. It means if we do not focus on increasing FDI and let FDI go out, what will happen in five to six years is that we shall achieve self-reliance. So the decreasing FDI has a positive effect on Pakistan. You can see it is above the increasing FDI so we can achieve more by decreasing FDI rather than increasing FDI why because we will achieve self-reliance and why it is above because the high premiums that we will be giving to them for staying in Pakistan will no more be there resulting in higher positive effect as seen here. So this is the first outcome that we see if we focus on the local investments, mobilize the local resources then what will happen is that the maximum surplus that is created will stay within Pakistan and it has more positive effect as compared to when you give the share to foreign countries with a higher premium.

The other model that I did was, where I tried to add a moderator on decreasing FDI and access that what if decreasing FDI has a negative effect then what will happen. So if decreasing FDI has a negative effect it will be achieving self-reliance by moderating the financial development and banking sector development. In the first graph you can see it as that the full line is the effect of increasing FDI so it's positive slope and if you look at other way around it has a negative effect while we decrease FDI. It means, decreasing FDI is negatively affecting Pakistan but if you have a high financial development means the financial sector is there to mobilize the local investment and give the resources to businesses using domestic loans or domestic partnerships. The negative effect becomes positive, it means that when there is an increase in financial development, the decreasing FDI becomes positive resulting in positive outcomes. Similarly, if there is a negative effect of decreasing FDI on GDP, but if you focus on banking sector development what will happen, the decreasing effect becomes positive. Talking globally, due to COVID there is a fall in investments especially countries like Pakistan, who were focused on foreign resources therefore lack of investments is hurting them.

So my discussion is giving a hope that if you have a good financial system or a good banking sector or if you mobilize the local resources, substituting the foreign resources, they become more productive because there is less premium to be paid to foreigners. Therefore, we could focus on exhausting the domestic resources first by productive resource utilization. We should focus on investing them into productive ventures. We need to look for foreign resources only if we do not have local resources. Secondly, what Dr. Saba said, we have youth bulge and it can help if they are directed towards productive ventures. This can be done by assisting develop entrepreneurs or we can promote our trained and skilled human capital outside Pakistan to increase our labor demand by bigger businesses resulting in earning more. Here we must understand that this human labor is actually a depreciating asset, if you do not use them in time or do not upgrade their skills, they will become old, obsolete and be less productive. Secondly, unlike what other studies say, my point of view is that the foreign remittances are good for us but not at the cost of brain drain, we should focus on creating opportunities so that brain should stay here in the Country.

Now, what the Golden Ring countries can give us? The Golden Ring Bloc can be a good venture, one, since the countries are nearer to or have common borders with each other

and second, they all import and export common commodities, goods and services to and from the world. So we can focus on trade and supply of skilled labor on one hand and do capacity building of our production sectors, both agriculture and industrial. Pakistan has strong financial services capabilities as compared to Iran and Russia so we can help them in this sector. As resource mobilization and trade will help us engaging in economic activities that can motivate our domestic businesses to export to nearer countries which will reduce the cost rather than focusing on America or Europe. Similarly, CPEC is playing and can play a major role not only in terms of providing just a road link reducing the cost of transportation, but also will help in technical and professional capacity building of our youth. Similarly, Russians are very good in heavy industry and pipelines and Iranians have done well in agriculture sector with low water requirement, we can send our people and get them trained there.

Lastly, what I suggest is that we should promote this Islamic finance because it has a high capability to domestically mobilize resources. We should avoid Riba and develop the financial joint ventures culture. The Islamic economic and financial system has a better, equitable and fair capacity to help us generate resources from our domestic market. I therefore, would like to suggest that we must carry out practical research to device practicable banking and financial systems so that we could limit and reduce the role of foreign resources like FDIs and debts to regain our economic freedom and suggest how domestic resource can help self-reliance.

Summarizing my talk I just want to say some points which I have observed in this discussion. First thing is that Pakistan needs the implementation of national policies. Unfortunately, in Pakistan for the last 35 or 50 years, only the foreign dictated government policies are formulated and implemented in this country and sometimes those policies are controversial and hurt the confidence of the other stakeholders. There is a need to implement and formulate the national policy. The difference between national policy and government policy is that government policy changes with the change in government, on the other hand, the national policy remains constant and it has no relationship with the change in government. So, the first point is that we should make one national policy and we should follow that one and in this way we can achieve our objectives. Second thing is that Pakistan is located at strategically very important location. Pakistan can get a lot of benefits and there are a lot of opportunities that Pakistan can exploit and for this purpose there is a need to streamline our policies and we should pay proper attention to this side. With this initiative of a Golden Ring Bloc we can explore these opportunities and in this way we can achieve rapid pace of economic development in our country.

Another point is that Pakistan needs improved trade relations with these Golden Ring countries particularly. We should try to get the benefit from their comparative advantage and all other things as Pakistan is unfortunately using primitive technology in the production process and because of that over the cost of production is very high and the quality of our product is very low and as a result, we are not in a position to compete the international competitors in the international market. Because of this reason we have to get the benefit from the Golden Ring countries in capacity building of industry. Second, we should try to obtain the highly sophisticated technology from them and we share our expertise of the areas where we are better with the Golden Ring Bloc. In this way, we can achieve the pace of economic development that is consistent and it will also drive the government to correct its policies, basically policies will be stakeholder driven as well as other functions.

Furthermore, economic stability and self-reliance are very much interrelated and directly related to political stability, internally and externally. Keeping in view the Pakistan relations with its neighbors, particularly with India and Afghanistan, Pakistan has to defend itself and for this purpose, we need clear policy to attract investments in long term industrial projects in Pakistan, particularly from the Golden Ring Bloc countries. This will not only give strength to economy but also indirectly give strategic security as well. These countries will ensure the protection and security of their interests in Pakistan. Another important thing is that we need to reduce our dependence on IMF and World Bank financial assistance, we should not follow the policy of accumulating debts rather we should try to enhance our exports and for this purpose, we should explore the opportunities available with the Golden Ring countries by utilizing the existing resources of the country with their help.

In the end, I can say that this is really a very valuable webinar with lots of information and practical recommendations that may provide guidelines to the policymaker of the country. I strongly believe that we should pay attention to the proposed measures to solve our problems which have been pointed out by the valuable and the respected speakers. I would like to conclude by suggesting that our government and policymakers should pay proper attention to the recommendations from the stakeholders while formulating the national policies. Thank you very much.

- **Mr. Hasnain Raza Mirza**

Just a few things which I would just like to say; Dr. Nauman talked about the Global village. Now as we all know that after this Covid-19 the philosophy of global village has died down. Now, every country is running for its own survival and looking within rather than looking across the oceans. So now what has emerged is that every country for itself and the immediate regional connectivity. So if you are within region, the best is what you can do. The second thing is what you have said regarding the negative FDI, you have answered two of our questions somewhat indirectly. As you have said that there is not much literature available on the negative effects of the FDI. Right, why should they put this literature to public access, because it will be against their policies of taking over a country economically. Therefore, obviously, we need to find ways of using our domestic, our local resources and only that is how we can counter these type of things.

6.1.7. Dr. Arshad Zaman

Salaam-o-aleikym all present. I would like to basically start with a synopsis of what I am going to say the questions you have raised are extremely sensitive and substantive and demand lengthy answers but I am aware that time is limited so basically I will divide my talk into three parts. Firstly, I will address very briefly the regional geostrategic challenges and the Golden Ring Initiative and what that involves. Secondly, I would briefly review the ground realities surrounding national economic security and self-reliance as the basis for answering the five questions that you have posed. The main piece of my talk is a concrete proposal for achieving joint economic security through an Iran-Pakistan Energy Community. This is a very specific proposal I wrote an article on it perhaps a year ago and I would like to revive that so to proceed with it. Now let's start from the regional geostrategic challenges and the Golden Ring Initiative. I would like to make a very simple point this is a very large topic but it makes a great deal of sense for Russia but less so far us. Because for us the strategic challenges probably if we look to the future lie in the Arabian Peninsula region one thing that I noted was that this is not a Russian government proposal. It is in fact a private initiative proposed by an American of Yugoslav and polish descent that is resident

in Moscow. It has received considerable attention but until it receives government endorsement of some kind I think we will need to pace our efforts accordingly. This is very large topic and we can talk about it all day but I would like to just make three points and move on. Russia is a European power and the proposed ring is an access ring around historically what used to be Khorasan.

Secondly, as I said what is to receive Russian government assent and support then it would be obviously better for us to be part of it rather than not. And finally as I have said our permanent interests lie in the Arabian Peninsula and our threats arise from the fast-developing moves of the U.S, Arab, Israel, India axis that is going on I think this is to state the obvious. But I shall say no more on this even though this bears very directly on the base talk. Now again the answers to your questions are a little difficult both because the questions are fundamental and because the premises that are shared by those who are asking the questions and at least I was a respondent are very different. So I thought the first thing to do would be to say what the premises are as I see them. Since, success is built upon reality and not built on dreams so some of the relevant ground realities as I see them are as follows. First of them is that our security is threatened more by domestic than by external factors, you may agree with me you may disagree but I don't have the time to defend my views but I will lay them out on the table for you.

Second, without social cohesion there can be no political stability and without political stability there will be no economic prosperity and security, unfortunately, we lack all three of them. Thirdly, external relations are the job of the government, our government is incapable of sovereign actions due to a fatal attraction of our ruling classes to the US, the UK whereas the state has been captured by lenders and expatriates. Therefore, nothing much can be expected of the government. What limited scope, there lies is in the hands of civil society and private sector stakeholders, like yourselves, largely unaided by government which is a great handicap.

Based on these premises I can give very short answers to your fifth question before proceeding to the main part of this presentation. How best can Pakistan extract benefits these questions and questions like this always suffer from the fact that there are two Pakistan's that is a ground reality. This ground reality is clearly reflected in the parliament. The common man on the street speaks of "roti salan" Pakistan whereas, the elite, the burger Pakistan banks privileges and money making. There is a much more meaningful categorization of classes in Pakistan than middle class, upper class, lower class, or capitalist. So given for a variety of reasons the disadvantaged is in no position to extract anything from anyone. So the question then becomes which Pakistan is you asking about and I am not clear about that. Secondly, what policy changes are required to achieve self-reliance? This reflects a fundamental difference of opinion about self-reliance as assumed in the question and my answer. To Self-reliance is a road and not the destination. Policymakers are free or loathed to travel this road for a variety of reasons of which we are all aware and this fatal attraction for their masters ensures that they will stay in bondage and their masters won't allow it. If you look across the top tier of our society, the three top contenders for the top post in Pakistan, two of them have sons who are British citizens and the third one does not know. You look across the thing when the Chief Justice retires who goes to London, the former Army Chief is living in Dubai, this is your top class. Your hands are too tied to seek Self-reliance. And so it is not a question of policy modifications it is a matter of putting head in your knees.

Now, the modalities for barter trade are trivial, these are now management questions many

of them are known and I will not take more time on it since, some of it we are already exploiting. Then the question of getting rid of our shackles, the brute reality is that our ruling classes like these shackles and there is no point in changing one set of shackles for another. Now, what arrangements will serve the strategic national economic planning, I think we must realize that Pakistan from an economic point of view is under receivership. We have handed the country over to our bankers, the finance minister, the Governor of the State Bank and all of his appointees are all birds of flight, today they are here and they tomorrow they will be somewhere else. They report to their masters abroad and there is nothing hidden about it and the prescription that they have forced upon you. I was just reading in the paper that electricity rates are to be raised is because of the IMF's neoliberal ideology in which both planning and regulation is forbidden to us and so the government cannot lend and cannot regulate they can write plans but they cannot have plans that have a cutting edge.

So, here I'm afraid we are rather dismissive but with that let me move to a more positive aspect. Even with all this even though our hands are tied. I think something can be fished out by the Civil society by people such as yourselves and if we build on low ground and keep our objective as limited as possible. And therefore, I would like to propose for your consideration that we work towards the Iran-Pakistan energy community. For this, I put together some statistics that are easily available I won't go through them I will leave you the thing you can work on it, data is available at International Trade Center (ITC) site. But we need to be specific because general ideas are of very little value. So it actually goes down and lists where the greatest untapped potential of Pakistan's exposed to Iran lies. Based on our present spectrum of exports and as you can see they have identified rice and sugar but also instruments in medical sciences which was a surprise to me. Now were we to diversify our export spectrum then they have studied the market and they say that the best options lie in lentils, darn of jute and again to our surprise reception apparatus for television but they give you 25 areas of yarn and one can explore it further and since you work with private sector you can share this with them and they can employ much finer techniques. Equally on the Iran side not surprisingly their best potential lies in polyethylene and methanol and if they were to diversify it would be unguarded cotton, fruits, soybean oil, and beans of various types.

Now, these are the official statistics and they have value only to a limited extent because the bulk of Pakistan-Iran trade is off the books. It is simply not recorded the way you come by it is that you look at Pakistan's statistics of what it says it exports to Iran and you look at Iran's statistics of what it says it imports from Pakistan. Pakistan says that they export 22 million dollars to Iran, Iran says that they import 330 million dollars from Pakistan. So the bulk of the discrepancy is due to this unregistered trade. This is why Baluchistan is such a lucrative posting for people who are retiring and want to pad up their savings a little bit, similar is the case on the Iran side.

Now let us discuss the case for an energy community, we have to walk into this with our eyes open. I will say three things about it, I will not make a detailed case we must be realistic. The first order of business should be a study of the factors that have impeded the growth of ECO and I mean this seriously. I propose that GREF should depute a team a joint team perhaps with Iran and possibly Turkey and do a very serious systematic study of where the shoe pinches. Now in the interim, it is reasonable to assume that starting small bilaterally would be the safest course of our action.

The proposal I'm now placing before you are based on this assumption that if we can overcome the geostrategic consideration basically it is American Blockage. If you go to the border at Mand you will see that the Iran transmission line stops right at the border all we have to do is to connect to it but the Americans won't allow it. The proposal now, therefore, is for Iran or Pakistan to make a unilateral declaration of its willingness to work towards an agreement. This follows the Showman Plan which was the most famous plan which led to the creation of the European Union. Under the agreement, once we announce that we are ready to do an agreement if there is a joint meeting of the two governments the Iran-Pakistan energy sectors as a whole should be placed under a common high authority within the framework of ECO. The high authority should be charged with securing modernization and quality improvement of energy production and distribution. The supply of energy on identical terms to the three markets or the two markets, I think that China, at some point in time will also join, as well as to other ECO member countries markets leading in time to an integrated market. The development of common markets of exports to third countries, outside countries, will result in equalization and improvement of living conditions of all workers. I had thought initially you will see my errors here I thought initially of a food and agriculture and energy community that's why the farmworkers were there we need to delete that because to keep it simple we should just focus on energy. It is the imperative because any path to self-reliance in today's strategic environment dies in shifting our supply of energy sources Iran from Qatar and Saudi Arabia and Emirates. What are the mechanisms the movement of energy resources and output between the two countries will be immediately freed from all customs duty and will not be affected by differentiation? To achieve these objectives during a transition period to be defined a production and investment plan should be drawn up. The compensatory mechanism for equalizing prices should be devised and the fund for rationalizing the distribution infrastructure because the limitation is always distribution.

Finally, conditions should be created to provide for more rational distribution of production at high productivity levels. How should it be implemented these principles and undertakings should be the subject of a treaty signed between the two states and submitted for ratification by their parliaments. An arbitrator appointed by common agreement will be tasked with working out the details according to agreed principles in writing and breaking any deadlock in negotiations. Common high authority would be composed of independent persons appointed by the two governments. The Chairman will be chosen by common agreement between the governments. The authority's decisions will be enforceable in both countries after ratification by their parliaments. Appropriate measures should be provided for appeal against the decisions of the authority we may invite a member from OIC to attend. Those are details but this is the thumbnail sketch of an actionable proposal with which we can start, it can be supported by Russia and China in due course I see no reason why they would be against it and this could be the seed of building a larger Global Ring Forum if that comes to be. I believe that GREF would be ideally placed to spearhead this initiative.

- **Mr. Hasnain Reza Mirza**

Dr. sahib just for your information, GREF is already working on an initiative which is establishment of Regional Energy Grid in which we are talking of all the energy forms oil, gas, and power. ECO is the Economic Cooperation Organization which has failed miserably, because it had been and is still being run by a few bureaucrats and the Foreign Office people, the actual economic stakeholders, which is the business community and the

industry, are missing from there. So, if we want to go forward, we have to bring in the stakeholders as the major players and policy makers of this venture. Therefore, in GREF, we have as majority the stakeholders. The main thing is that first we have to decide that we will succeed and only then we can succeed.

- **Lieutenant General Sikander Afzal MI(H), (Retd.)**

Thank you Dr. Nauman. Let me be very honest, it truly has been a pleasure listening to all of you. Economics was one of the subjects I ran away from and went and joined the military thinking that I won't have to study there but I ended up studying a lot more than I could have thought. And even when I was a Brigadier, the first thing that was taught to us at the International Defense College was, that national security is preeminently and predominantly dominated by economic security. That was when I actually learnt the importance of what economics is and what the economic health means for a country and especially for Pakistan. Till then we always used to crib and like most of the students who are listening would be saying that the government is not doing anything, our economists are not doing anything and the country is going from bad to worse. Do you really understand the significance of the economy and the sovereignty? It is simply because that, unfortunately, what we are taught in various areas during our educational years in the schools and colleges we are not taught the importance of sovereignty whereas, sovereignty is dependent mainly upon the economic security. If you are economically independent, then nobody can touch your sovereignty.

The same has been emphasized by the speakers themselves. I'm thankful to them for giving us some very fruitful suggestions and we certainly will continue to interact with you. We will gain more from your expertise and as we go along seek more guidance from you in order to come up with viable solutions which we can implement or recommend to the government to implement. We have the backing of our entrepreneurs, we have the support of our business community, they have their connections in these countries they already are interacting with them, so one can through these business links reach up to the highest level. What we need to do now is to come up with a viable proposal and place it before the government of Pakistan and if possible, place it before the governments of the other countries through our business communities and take them to a fruitful conclusion so that Pakistan can benefit in the long run.

6.1. REGIONAL ENERGY GRID AND NATIONAL ENERGY SECURITY.

- i. Mr. Abid Sherwani.
- ii. Lieutenant General Sikander Afzal HI(M), (retd.).
- iii. Engr. Mr. Hasnain Reza Mirza.
- iv. Engr. Mr. N. A. Zubairi.
- v. Engr. Mr. Tahir Basharat Cheema.
- vi. Engr. Mr. Salis Usman.

6.2.1. Mr. Abid Sherwani

My dear colleagues and participants, Assalamu Alaikum Warahmatullahi Wabarakatuh. I welcome all of my worthy speakers of this seminar, Engineer Tahir Basharat Cheema Sahib, N.A Zuberi Sahib, my dear friend Salis Usman sahib, Hasnain Reza Mirza Sahib, and General Sikander Afzal Sahib and many others participants. This is our consecutive 5th webinar of this series and today's topic is Energy Security. This webinar is part of the webinar series on contemporary issues being organized with the collaboration of the Golden Ring Economic Forum and University of Management and Technology. We thank our partners from GREF who have collaborated with us to ensure the success of this event and UMT promises to continue playing an active role in increasing the awareness on this topic of political and economic importance. In the earlier session in the webinar series, we have already talked on different very important issues and concerns such as economic development and recovery, the geopolitical and geostrategic importance of the Golden Ring Bloc. The role of media, it can play in the development of cooperation between Golden Ring countries and today we are going to highlight on very critical issue which we are facing with the last couple of decades. Hence, energy security, in the long run, ensures the energy supply for economic development and environmental need through timely investment. The energy crisis in Pakistan is well documented we need to ensure that it doesn't become a security threat. Pakistan works on the import driven energy policy as we import almost 1/3rd of our energy resources in the form of oil, coal, and LNG. Pakistan oil imports were recorded at 3.5 billion dollars from July to October 2020. This means energy cost not only drains the foreign exchange reserves but also exposes economy to international energy price shocks. Pakistan has made significant investments in the energy infrastructure during the last decades yet it remains energy insecure. Energy security should focus on decreasing the dependency on the external resources and move toward adoptions of green energy solutions and increase energy conversation efforts. In today's seminar, we have a galaxy of very renowned experts on our panel today. They will discuss these issues in greater detail and we hope that today's session will support further research on this topic amongst all faculties, students and other think tank and the stakeholders. In the end, I would like to hand over the session now to the moderator to commence with the discussions and we do hope that our experts will enlightened us with their experiences. They have a lot of experience in this field and Inshallah by their very good suggestions we do hope that our country will prosper in the future as well. Thank you very much over to Mirza Hasnain Sahib.

- **Mr. Hasnain Reza Mirza**

Thank you very much Abid Sahib for opening remarks and once again thank you very much

for collaborating with us and the ORIC team of UMT. One thing I would like to inform our viewers and listeners that this time due to previous problems of hacking, we have issued meeting ID and Password only to a limited number of people, speakers, and a few others. But this whole event is now being broadcasted live on UMT Facebook site so all of you can view the whole proceedings live on the UMT Facebook. That's why you all will be seeing not so many participants on this participant list.

Now, I will just quickly introduce our participants most of them are very renowned. Starting from Mr. Tahir Basharat Cheema, he is former M.D PEPCO. He had headed different other organizations under the government of Pakistan and CPPAG. He is one of the prominent figures in energy sector, power sector, especially in distribution and transmission side. He has a lot of experience on policies side also. Then we have Mr. Salis Usman, who is also an ex-General Manager of National Transmission and Dispatched Company (NTDC). He had been working on very important different assignments, like CPPAG and power system planning, especially for the Pakistan national network. He had also worked on the National Grid up-gradation and power distribution system modernization programs. He had also worked in Saudi Arabia. He was with the SAARC Energy Center for five years and that was where he was also working on the cross-border energy transmission. So, he has hands-on experience of how to plan this, which is directly linked to GREF initiative of Regional Energy Grid. Therefore, the main thing, what we will be asking him to share is his experience and how we do it. Then we have our speaker from Islamabad Mr. N.A Zuberi, Mr. Zuberi is EX-MD Private Power Infrastructure Board (PPIB). His main role at PPIB was to develop power generation through private sector. All types of fossil and non-fossil fuels like coal, gas and oil based thermals and renewable energy hydropower, wind and solar energy projects. He will be contributing his thoughts that what role of energy mix of renewable and fossil energy in Pakistan is required for our energy security and how can we strengthen this.

Lastly, I will also be presenting my thoughts on the Regional Energy Grid concept of GREF. I'm a consulting engineer heading an engineering consultancy firm M/s. Mirza Associates Engineering Services Pvt. Ltd. In Lahore. Previously, I had worked with the Government of Pakistan on Defense related Projects and now I am working privately.

Now, I request General Sikander Afzal, Chairman GREF to kindly give your views. Thank you.

6.2.2. Lieutenant General Sikander Afzal HI(M), (Retd.)

Dear friends, ladies and gentlemen, Assalamu Alaikum, and a very good afternoon. It is indeed a pleasure for me as the Chairman of the Golden Ring Economic Forum to welcome you all and especially our eminent speakers for today's webinar. For those who are not aware, GREF is a think tank based in Lahore and focuses on economic issues and developments which affect Pakistan and how Pakistan can benefit from the evolving and changing developments in the region surrounding Pakistan. The think tank is the idea of the business community of Lahore and focuses on ways and means to enhance economic activity between Pakistan and the Golden Ring countries. One of the objectives we have laid down for ourselves is to lobby for and focus on ways and means to strengthen the economy of Pakistan primarily by enhancing trade and economic interaction between Pakistan and the countries of the Golden Ring namely, China, Iran, Russia and Turkey.

The most important contributor to the national security of a country is its economic strength and an important component of economic strength is the industry. For industry to function and survive we need energy for it. In the case of Pakistan as we are aware energy is one area we have always lagged behind and its dearth and cost has stagnated our industrialization and growth. The development in the energy sector has been as such more driven by domestic demand rather than pressure from the industry. Pakistan has been dependent on the Middle East for fossil fuels and has not diversified its resources. The lack of long-term policy for acquisition of raw material and mix of energy has led to imbalanced growth resulting in high tariffs and losses. Today we hope to get answers to some of the questions we as GREF have raised for our guest speakers who are specialists in their fields.

6.2.3. Hasnain Reza Mirza.

Bismillah Al Rehman Al Raheem. Salaam Aleikym and good afternoon ladies and gentlemen.

Today's theme is energy security and its significance for Pakistan under the current regional geostrategic scenario. I shall mainly focus on GREF initiative of need for establishing a Regional Energy Grid, it's related issues and how possibly we may achieve our goal.

Now, first of all what is energy security?

“Energy security is defined in terms of the physical availability of energy supplies to satisfy demand at a given price”. Security of energy supply is an important pillar of energy policy. Energy security provides a rationale for a number of policy measures. Most sensible policies focus on reducing the risk of disruptions in supply and the impacts of supply disruptions. In terms of strategic importance, energy security is second only to the food security.

In case of Pakistan, its energy security, at present, is heavily dependent upon mainly two Arab countries KSA and UAE for oil, and to a certain extent, on Qatar for gas. Today we need to discuss the effects of the evolving regional developments around Pakistan on our energy security and propose certain way out. We need to discuss;

- a. How Pakistan can ensure its energy security when KSA and UAE, have signed defense and security agreements with Israel and India?
- b. How Pakistan can work with Iran and Russia circumventing US and Arab pressures? Since, Pakistan is not willing to leave CPEC, nor its new friend Russia and is also not willing to go against Iran. Under this scenario they will try to squeeze Pakistan from every side and energy is the most effective weapon in this regard. There is an eminent threat that India and Israel will exert pressure by disturbing oil supplies to Pakistan hence, crippling our economy.

Pakistan has been facing serious energy shortages, which have adversely impacted its economic growth. It is expected that the total primary energy consumption will rise to 360 MTOE by 2030. The requirement for electric power generation is also expected to increase to 62,590 MWs by 2030. Lack of strategic planning in the energy sector e.g. relying on high priced imported fuel rather than other cost effective methods at hand for power generation,

is one of the many reasons behind this energy dilemma being faced by the country. The electricity mix of Pakistan has shifted from hydropower, as a major source, to a fossil fuel lead mix, over the last three decades. This shift from renewable to carbon intensive thermal resources has never been the outcome of any planned energy strategy. The factors contributing to the energy crisis have led to the conclusion that energy security coupled with integrated energy planning is the priority area for Pakistan for its economic revival and sustainable economic growth.

Developing an effective integrated energy strategy requires exploring all linkages, considering the trade-offs and keeping in view the eventualities so that long-term strategic security in the domain of energy is attained. While developing an integrated energy security plan one also needs to keep in mind several risks factors like:

- i. Physical risks, due to stoppages in energy production or to exhaustion of energy resources and temporary disruptions due to geopolitical crisis or natural disasters.
- ii. Economic risks, caused by volatility in energy prices.
- iii. Political risks, by energy exporting countries intending to employ energy deliveries as a political weapon.
- iv. Regulatory risks, social risks and environmental risks.

All the above discussion warrants that Pakistan not only develop local sources of energy but also look for alternate, cost effective and secure sources of energy supplies, geographically closer to our borders. Pakistan needs to develop alternate strategic energy partners with land links in the regional in addition to the conventional ones for ensuring national energy security.

The GREF initiative of Golden Ring Regional Energy Grid is the solution to provide national energy security through regional energy cooperation. Obviously there are certain issues related to cross-border energy cooperation need to be addressed.

Regional energy cooperation for market integration evolves through bilateral and multilateral cross border energy trade arrangements, covering shared generation assets and multi-country trading through integrated competitive markets. The slow progress in achieving cross-border energy trade can be attributed to technical, operational, political and commercial issues. These predominantly vary according to the socio-economic and political circumstances in participating countries. Therefore, while planning for the Regional Energy Grid concept these barriers and constraints need to be addressed.

We shall briefly discuss here these regional-level barriers and propose as how to overcome these by amending and developing new policy framework to address cross-border cooperation in energy trade.

a. Volatile and Uncertain Regional Political Climate.

Internal political conflicts, government-to-government models for cross-border trade, weak political will resulting in lengthy technical negotiations frustrate the process of regional energy sector cooperation. But here in case of golden ring countries, developing strategic

energy security is a critical issue for all of them in one way or the other therefore, the political will is there. Negotiating teams can be given a definitive time lines to resolve issues and formulate a joint draft agreement.

b. Regulatory Coordination for Cross-border Cooperation

For regional energy trade, the regulatory policies play a major role. National regulators need to harmonize and coordinate their regulatory practices for energy cooperation and trade in the region. Technical aspects such as standards, rules and procedures concerning transmission access, pricing templates, congestion management, operational codes and protocols for system operation, energy accounting and payment structures and data transfer protocols need to be gradually “regionalized”, in parallel, for seamless and stable operations of the transmission systems.

c. Absence of a Platform

By-lateral trade is usually controlled and monitored by inter-ministerial committees or commissions of the participating countries. These committees most of the times do not represent the interests of stake-holders, therefore, negotiations are delayed and remain inconclusive. Similar platforms, but controlled and dominated by stake-holders technical, commercial and legal experts, will be required for proper and quick resolution of issues and their implementation.

d. Tariff and Non-tariff Market Barriers

Like other commodities and services, trade in energy is also hindered by export, import and transit duties/taxes. For the implementation of regional energy trade a regional agreement for free trade of energy would be required.

e. National Energy Policy Reforms

Because of the state-owned energy utility organizations, reforms in this sector in most of the countries of the region are less “market-oriented” and aim mainly at giving subsidies to consumers due to political as well as social pressures. These subsidies can be reduced by enhancing and improving operational performances. These subsidies are internal and local issue of a country and therefore, should not be made a stumbling block during cross-border price or tariff negotiations. These issues should be resolved through national energy policy reforms.

The above discussion could be concluded as follows:

The fast changing geopolitical scenario in the world and especially in the region covering China, Russia, Iran, Pakistan, Middle East and Turkey has made it necessary for Pakistan to revisit the national energy security requirements. The launching of Regional Energy Grid initiative is the only solution in the interest of not only Pakistan but also for China, Iran, CARs, Russia and Turkey. It perfectly blends into China's Belt & Road Initiative and CPEC, supporting Chinese strategic interests in the region. Western China can be covered

through Iran-Pakistan gas pipeline making it Iran-Pakistan-China line. Joint development of hydropower projects in GB like 7200mw Bunji, 4500mw Yalbu, 4500mw Tungus and others will produce electricity closer to Chinese border of Sinkiang Province.

Iran's interest in joining this initiative is both economic as well as strategic. They will have overland oil and gas pipelines coming into mainland Pakistan and connected to Gwadar port for further export. These pipelines can be connected to central Asian republics and Russia to make them more multinational ultimately providing security to Iran's energy exports. This will give Iran an alternate outlet in case of blockade or conflict in Persian Gulf. Iranian electricity can play a major role in developing Pakistan side of Baluchistan.

As discussed above, Pakistan is the most energy starved country in the region and has severe energy security problems in all electricity, gas and oil sectors. Its GDP is suffering losses due to energy shortages. It has a huge un-tapped hydropower potential. The brighter side is that Pakistan is trying to bridge its demand and supply gaps. This produces huge opportunities for regional cooperation in not only cross-border energy trade but also opportunities for investments in electricity, gas and oil sectors in Pakistan under the Regional Energy Grid initiative.

Russia has its own strategic interests in the region. Russians have coined a term "Pakistan the zipper of the region" which clearly show that Pakistan has become part of their national interests. They have strong electric power, oil and gas technological knowhow which they want to sell to Pakistan and through Pakistan reach out to Africa and far east. Pakistan will definitely require robust and proven energy sector technology to further develop and upgrade its electricity, oil and gas transmission and distribution networks. Secondly, Russia can get added weightage in OPEC if this regional grid is established since, the energy resources of CARs, Iran and Russia will be united under Russian leadership.

Turkey is also not only one of the major users of central Asian and Iranian oil and gas but also a gateway to Europe. It can earn considerable revenues from transit agreements. Turkey can also contribute its technological knowhow in developing the grid structure.

The concept of Regional Energy Grid consisting of electrical transmission lines, gas and oil pipelines networks is the biggest opportunity for regional cooperation. Certainly, a lot of policy framework planning is needed to be put in place for regional trade. But the physical development can be started in parallel instead of waiting for the other. This parallel development will also help the policy makers in addressing the actual problems, as & when they will arise.

It is recommended that major investments for the development of the Regional Energy Grid should be in private sector, may be through Asian Infrastructure Investment Bank, and other direct investments from China, Iran, Russia and Turkey. Thank you very much.

6.2.4. Engineer. N.A. Zuberi

Thank you very much Hasnain Mirza Sahib, Assalamu Alaikum, to Honorable Lt. General Sikander Afzal Sahib Chairman Golden Ring Economic Forum, distinguished professionals, good afternoon to friends in Russia and good evening to our Chinese friends. Let me, first of all, pay my compliments to the organizers for arranging a webinar on such an

important topic of energy security. I will be delivering the presentation on development of local alternate energy resources for national energy security in collaboration with Golden Ring Countries. So briefly the contents of the presentation are, I will start the presentation with the energy security, I will touch upon the overview of Pakistan power sector, will discuss the energy resources in Pakistan, the fuel mix, how the energy security can be achieved, I will be talking on the Golden Ring Regional Grid. And then, in the end, I will try to conclude the presentation by some conclusion and the way forward.

Now energy security concept, I will not discuss in detail as Hasnain Mirza Sahib has discussed it, but mainly the concept involves around availability, applicability, acceptability, affordability, diversity, and institutional capacity. To start with we need to have an analytical framework. The analytical framework for energy security is that first of all demand-supply analysis is carried out to determine that how much the gap is there and how much additional generation is required. Then the optimum analysis involving all other factors like how the generation will be met with, what type of fuel will be taken and what type of technology will be selected. And obviously, there will be analysis of the financial requirements whether the project will be implemented by private sector or the public sector. Then the analysis is also needed to see the impact on the prices which means institutional capacity building. This is the general framework for the energy security.

Now let me touch upon the Pakistan power sector, at the moment if you see that total installed capacity of Pakistan is around thirty-nine thousand MW in which around 58% is through private sector and 42% is through public sector which means that the private sector is playing an important role in supplementing and complementing the efforts of the public sector. In Pakistan, the private sector started in 1994 and they have a good success story at the moment. Now, if you look at the Pakistan power sector organization, you will see that it is very complex. There are more than around 25 institutions, these are all special purpose institutions, for example, there is an institution which is a very old, that is WAPDA, at the present it only deals with the hydel projects but previously it had thermal power plants as well. As Hasnain sahib has talked about the mega hydel projects in the North, all of these are within the domain of WAPDA. All those projects which involve the irrigation, flood control, navigation are also handled by the WAPDA. PPIB is the one which facilitates the development of thermal power projects and medium to large hydropower projects in private sectors. AEDB is a purpose built institution to handle basically the renewable energy resources projects in the private sectors. There is a regulator functioning since 1997, which is NEPRA and there is also CPPA-G which is the power purchaser. As you know in Pakistan the provinces also play an important role, they can develop power projects and they can have their own transmission line networks.

Pakistan the National Grid consists of 220 KV HVAC and 500 KV HVAC transmission lines and substations network. The philosophy of the design of this Grid was that in summers the electricity flow direction is from North to South because of large hydropower generation, and in winters from South to North due to major part of thermal plants. At the moment we are connected with the Iran through a small 132 KV link and there is a plan to connect Iran with 220 KV Gwadar link also. At the moment, in the North, the Peshawar will be connected through CASA 1000 projects. In that case, 1000MW of hydel power will be transmitted through a DC link from Turkmenistan through Kyrgyzstan, Afghanistan into Pakistan. So, there is already two sections of Grid emanating from Pakistan towards Tajikistan and from

Pakistan towards the Iran. This is just a pictorial view of how the ring will be established once it is there. So, all these countries are very closely connected. Now, in Pakistan, there are five main indigenous resources which are water, sun, wind, local coal, and gas. If you see the quantum of this energy resources are tremendous wind is around 346,000 MW, solar is 2.9 Million MW, Hydro is 60,000 MW, and Thar coal generation could be more than 100,000 MW and the resource is 175 Billion Tons. As you know that in the North, we have hydel resources, in the South, we have Thar coal resources, then we have tremendous wind and solar resources not only in the South which is in Sindh but also in Baluchistan and in the southern Punjab as well. In Pakistan, the private sector power generation is being implemented through private sector power policy. At the moment, there are two policies which are operational these are 2019 power policy and renewable power policy 2019. The government has provided reasonable incentives to the private sector so that they can come in Pakistan and do business, for example, they have complete exemption on the corporate income tax, turnover tax, and withholding tax. There is no business in Pakistan in which government has provided guarantees for the obligation of power purchaser and provinces for hydel power projects. In private sector, government bears the hydrological risk then there is a special taxation mechanism to facilitate the investors. So, lots of incentives are there to encourage. Actually, these private power projects are based on non-recourse financing. A lots of agreements are required between several parties, for example, if there is an IPP it has to enter into an agreement with PPIB, then an agreement with power purchaser after the regulator determines the tariff, agreements with the lenders, agreements with the fuel suppliers, with the EPC contractors and so on.

Now, let's have a look on the integrated generation plan of Pakistan. At the moment we have 50% of our generation through imported fuels and 50% of our generation through indigenous fuel. The indigenous fuels which we are basically utilizing for power generation in Pakistan are hydro, wind, solar, bagasse, gas, nuclear and local coal. And the imported fuel based projects are of Coal, RLNG, and RFO. The projections for the year 2030 are that our basic generation based on imported fuel will be around 27% and the generation based on our indigenous fuel will be around 73%. As you know we have indigenous resources which are solar, wind, hydro, and coal therefore, for our national energy security, the right energy mix should be based almost completely on the indigenous resources. To achieve energy security, the projects running on cheaper fuel can be dispatched first, for example, wind and solar should be a "must run" projects, Hydro as base load plants, oil and gas based thermals as peak load plants and coal and nuclear be optimal base load. Now due to financial constraints with the government and to enhance energy security, the projects can be developed both in public sector and in the private sector. The renewable energy which is wind and solar has certain advantages, the main advantages are the short gestation period, low infrastructure costs, highly competitive tariff and environment friendly. We can get easily, financing for these projects. Due to these advantages of wind and solar projects, I think these projects should be playing an important role in the energy mix.

For energy security and affordability Pakistan to accord highest priority for the development of projects based on renewable energy products. Now the Golden Ring Countries which are Pakistan, Iran, Turkey, China, and, Russia have abundant natural resources. These countries can utilize the natural resources for the energy security by sharing experiences and lessons learnt through institutional arrangements for the development of the resources

through private sector. They can also share their experiences of legal and regulatory frameworks for fast track development of the energy resources and policies to encourage private sector for the development of the natural resources. For energy security, regional grid is highly desirable, so that the resources in the Golden Ring Countries are transformed into the electrical power or transferred through pipelines and transported to the regional countries at affordable rates benefitting the masses of the respective countries. Following are some of the options which could be considered, for example, gas and oil sharing through pipelines network from and via Iran and Central Asia, electricity through a HVDC based transmission network between Golden Ring Countries similarly, import of coal and nuclear fuel and LNG through land based networks. Pakistan to provide support to Golden Ring Countries in the areas like providing services to the government and private sector in the energy sector, align with the interest of the region, provide energy corridor for transportation of energy resources.

An important aspect of energy security is to have a strong industrial base to produce all components which are involved in power generation, transmission, and distribution. Golden Ring Countries can play a very important role to enhance Pakistan industrial capacity by transferring technologies from the Golden Ring Countries to Pakistan in power generation, transmission and distribution. There is cheap labor available in Pakistan for such production units. Other opportunities which are available in Pakistan are rehabilitation and modernization of the existing energy related networks, development of industrial and production facilities, investment in the new technology in wind, solar, coal, nuclear and exploring the possibilities of the joint ventures with local business houses for the development of manufacturing of various plants and equipment for power generation.

Now, concluding my submissions, I would like to say that Pakistan has abundant water, wind, solar and coal resources hence these resources should play a dominant role in the energy mix of Pakistan as they are affordable and they are reliable. For energy security, the resources available are needed to be transformed into power so that it could be provided at affordable cost with reliability and sustainability. For energy security as I already talked regional grid is a must which is highly desirable so that the energy resources in these countries can be utilized efficiently for the betterment of the public. Golden Ring Countries can play lead role in the development of power projects in Pakistan, utilizing the indigenous resources through private sector or through the public sector. Golden Ring Countries to utilize the natural resources by sharing experiences and lesson learnt for the development of natural resources, institutional arrangements, legal and regulatory frameworks for fast track development of the natural resources, policies to encourage private sector for the development of natural resources. Golden Ring Countries to import and export the energy resources within the region and Golden Ring Countries may support Pakistan to expand its industrial bases by investing in the industry related to power generation, transmission, and distribution. With this, I thank you a lot and I thank Hasnain sahib I have concluded the presentation within the given time, thank you very much, I'm available for all type of question.

- **Mr. Hasnain Raza Mirza**

Thank you very much Zuberi sahib, yes you have tried to do it, thank you for that. Now I will request our beloved Engineer Tahir Basharat Cheema to enlighten us with his views. Tahir Sahib please over to you.

6.2.5. Engineer Tahir Basharat Cheema

Thank you very much and very good evenings to all my friends and of course the viewers. There are a few questions which need to be raised then discussed and then smothered through solutions. First of all, we feel that Pakistan has always had a big policy deficit when it comes to issues of energy. Imagine sir, that we have had four policies for exploration and production of petroleum and gas products. And none of them have really been able to achieve whatever they were destined to. But for the good fortunes of OGDCL, DPL, Mari Gas, and a few other companies which have a big footprint in Pakistan, rather they almost have the ownership of this sector of the country, nothing much has happened in this part of world. And this was all because of the policies deficit. The policies which could not get implemented were either not implementable or they were scuttled. Now, coming over to the electrical power side, we see that first of all we had the 1994 policy which brought in the IPPs to our great luck. Then we had the 2002 policy which attracted the local corporations again for the IPPs. Then we had what is known as the 2007 policy and then a new document known as the 2013 policy, an important document, then we had 2015 policy under which LNG and coal projects in Punjab were permitted. Now imagine LNG based power projects getting installed in Punjab and also the coal power great ventures, for example, at Sahiwal came up. Of course, it was followed up by what we have at Port Qasim and UPKO and all that. Pakistan had its first Alternate and Renewable Energy (ARE) Policy in 2019, which is enforce at the moment. And presently, we have what is known as the draft, since it has to pass through the test, the 2020 Power Policy.

All of these policies were formulated, crafted, drafted as special purpose vehicles catering to special interests. None of these policies I mean the four we have had the ENP policies for petroleum and the gas and NEP great number of power policies for the power side could be built and sold as the unified national policy. That means what, that none of these were public policies, none of these were that everybody, the stakeholders, would have wanted them to be for the good of the public, they were only special purpose vehicles and that's it. So, whatever happens, if we wish to do something to succeed, achieve a semblance of energy security we need to have national policies that are all-encompassing, comprehensive and a very simple to implement. So, first of all, there is a requirement to break the policy deficit syndrome, that is very important. And if we wish to assure actual energy security, for which we do have the means of course, we can conjure and come up with good implementation strategies and that should not be much of a problem. The problem is, as I have emphasized upon is the right policy, and there is no reason why can't we can do it.

Now coming over to the next level, first of all we need to look for availability of energy, which means that from where can we get the cheap and reliable energy, meaning thereby that we have to utilize the local resources. We have to look at that would it be alright if we just tapped the solar energy, wind power and hydro power in the context of costs and other factors. We need to, very carefully, analyze the coal power that how we do it with coal in the present scenario when the environmentalist and the world are talking of reducing carbon emissions. Which means that in near future our exports may be hit because there are soon going to have international laws which will require a stamp or a certificate declaring that the carbon footprint of this product is very small. With coal, this is an issue, so maybe we will have to convert our coal plants possibly to gas or to liquid fuel. Sure it can be done, but again that is going to be a part of the comprehensive policy. So once the local availability is considered to have been thought thoroughly and we understand that the energy sources are available in

the country and around us, especially in the Golden Ring countries and CARs and in a manner which could be protected, which could not be jeopardized, which could not be hit by our enemies then the policy provisions can be easily made to tape them.

The third level is the issue of accessibility, are those sources assessable, is it possible to access all those resources at same time or maybe by step manner. Linked to this is the transmission part, from source to the user, that too has to be thought over, maybe some experts like today's meeting need to sit on it and think about this issue. The accessibility is also directly linked to the reliability part, means that the access and transmission network should be secure and technically fault free and reliable. Yes, there could be outages but they should be minimized. Now this raises the issue of quality of service, since, it is in itself is a very vast subject and think we need to discuss it separately, especially when we are also talking of cross border energy transmission. May I suggest to have another exclusive webinar on Regional Energy Grid Initiative of GREF where we can discuss this and other related issue.

Now, the fourth level, which is the most important and the most overriding in national energy policy planning, and that is the cost issue. By the way when we are discussing the costs issue we should understand that there are two sides of it, one is the normal and usual side and the other is when it becomes of strategic and security necessity. So the cost and price issues need to be dealt separately for both cases. At the moment whatever energy is available in Pakistan is prohibitively expensive. It is not possible for the public to pay for it, our industry is unable to pay for it. Lately, the PTI government has been able to provide huge subsidies to the industry of Pakistan. They are looking towards subsidies figure of over 300 Billion Rupees, will that be sustainable? Maybe it is good for this financial year but what will happen the next year or the next? So affordability issues hit us like anything. And then as a result, what happens is because of this affordability issue there is rampant illegal extraction of energy from the networks in Pakistan. Pipelines, both oil and gas, wherever people can lay hands to break into the pipeline system, they steal crude oil even and finished products too, and gas is stolen like anything. The UFG of the SNGPL (Sui Northern Gas Pipelines Limited) has touched the strong numerical figure of 13%, it is unheard of. I understand that the Pakistani spending on for example, on gas pipeline system is probably amongst the biggest in the region and nobody does it like the way we have been doing in Pakistan I agree but 13% UFG is unheard of. Till a few years ago, the Sui Southern Gas Company Limited used to be alright, they talked about 1 or 2% losses. But now, they also have the double digit figure. Then come to the electricity side, it is even worse than the gas theft. Huge amount of electricity is stolen and if it is not stolen, in certain cases, nobody's pays for it. So much so that the government has to come up, sadly and unfortunately, with a policy known as revenue-based load shedding and load management. In cities like Islamabad and Lahore we do not see revenue based load shedding but we see load management based load shedding. We usually get continuous power except when it comes to rains, hail or dust storms and other natural disasters when the system or the infrastructure breaks down otherwise, we have continuous supply of power. But when it comes to Khyber Pakhtunkhwa, Baluchistan and major parts of Sindh including Karachi as of today, I'm talking of today, at this very moment there is anything between four to sixteen hours of load shedding. If we quantify that figure into megawatts we see that anything between 3000 to 5000 megawatts of power is being shed each day at every minute. On the other hand, this leads to less withdrawal of power from the independent power producers (IPPs) resulting in payment of sixty-six percent (66%) as the capacity charges for not using their minimum capacity, this amount then translated on to the unit cost of electricity and that's why the

power tariff is growing like anything making electricity unaffordable. Therefore, it has become a vicious cycle creating even bigger affordability problem. This phenomenon is in its worst in Baluchistan, parts of Southern Punjab, KPK and Sind therefore, they have a lot of load shedding and federation is getting its feet burned of it. During my last tours of all these three provinces I was asked by the people who were facing the revenue-based load shedding that there is a small percent of people who are not paying but why they are being punished, are we not part of the federation, are we not Pakistani's, is Punjab different? The local land lords and politicians who themselves steel electricity and don't pay have created this sentiment there for their own personal gains. I did not have the heart to tell them that because there is illegal use of energy in your areas and because of the frontier regulations are applicable to you through which collective responsibility comes into force and the entire area is put into dark. So the basic cause is the policy deficit and a proper mechanism. We need to have a national or public policy, of course a long term one, which should serve for the next twenty-five years thirty years. Policies are living documents which can be changed whenever there is a requirement but the policy deficit has to go and none new policy should ever see the light of the day which is for a special purpose. There has to be one integrated national policy for energy and the things get defaulted into it.

Secondly, we will have to look into the availability issue in the light of cross-border linkages which are very important from energy diplomacy point of view also. We must know and analyze that whatever we have and whatever is available in the Golden Ring countries and CARs that needs to be considered as available. But the issues of the accessibility and affordability will be of prime importance. If we fail to tackle the accessibility, transmission and the affordability and fail to provide affordable and reliable energy for the industry, the agriculture, the commercial and the residential requirements of this country we are in a bad shape. You will be really surprised to know that Pakistani's are spending up to three times more as a percentage of their income in comparison to what the developed countries are spending for availability of drawing energy requirements. How can the Pakistani's standard of living can be raised if they have to spend say 30% of what they earn just to access electricity, gas or to arrange the fuel for their transport this is something very sad? Now, how do we assure affordability, for this, first of we need access to complete data, we should understand the numbers, we should know our exact requirements, we should then come up with the right kind of energy mix and then the requirement to have such clear agreements which are in the public interest and not one sided. Here I would quote that most of the IPPs Power Purchase Agreements are suspect at best. Whatever were signed while keeping the 1994 power policy in view not only had many flaws but also are heavily tilted towards the sponsors of the IPPs. Similarly, most serious thing is that most of the clauses of the PPAs could be manipulated as desired by the sponsors of IPPs. The Muhammad Ali Commission Report detailed certain major abnormalities as 20% wrong invoicing, misinterpretation interpretation of PPAs clauses and their wrongful and outright fraudulent practices in implementation, over invoicing and all that, so we have to be very careful about it. That means the governance of the energy sector in Pakistan needs to be upgraded and handed over to the professionals in the energy sector and away from the accountants and generalists otherwise, none of the things which we have envisaged for Pakistan will ever become reality, I mean we won't be able to achieve those goals. So these are the issues which I have talked about as questions do carry solutions within them and recommendations can easily be drawn from them. Rest I leave to my friends who are going to speak after me. Thank you very much.

- **Mr. Hasnain Raza Mirza**

Thank you very much Tahir Sahib for your good remarks. Yes, you have talked about the integrated energy policy (National energy policy) which is the most critical thing. And all the issues, the questions you have post are directly related to an integrated energy policy, a proper energy policy. Obviously, if you don't have the clear goal then everything will start moving the way which it is moving now. So all those things which we are talking, you are right sir, the things have to be done by the professionals. As I have just said in my talk that the stakeholders should be the main part of the policy making along with their engineers, technicians and legal people and not the generalists. Now I will request our next speaker Mr. Salis Usman, who has a lot of experience of cross border energy grid by serving in SAARC. So let's see how we can benefit from his experience and what he has to talk about regarding the GREF initiative of Regional Energy Grid Sir, Salis Usman Sahib over to you.

6.2.6.Engineer Salis Usman

Thank you very much, sir. First of all, let me say thank you very much to everybody and especially to the host and honestly I have been enjoying this whole discussion and I think Cheema Sahib got it probably in the last gear and this is wonderful, a lot of learning regarding a lot of issues. But I am just started getting afraid of his last statement that the speaker coming after him should be addressing these questions. I also have got a few common questions for which he has very rightly put in the perspective of the whole situation. Of course we, engineers, are here to provide the solutions and let us hope that we will all learn something from here and we will move forward. Sir, time is very short so, I will be very quick. I just want to give you a very quick brief of our indicative generation capacity expansion plan. We have prepared two versions of IGCEP which were not approved and now we are working on the next version. But very quickly, let me tell you that this is a least cost generation expansion plan and every year it has to be updated in compliance with the regulatory framework set forth through National Grid Code. Under Planning Code (PC) 4 of National Electric Power Regulatory Authority (the Authority) Grid Code – a statutory document by the Authority – National Transmission and Dispatch Company (NTDC) is every year obligated to prepare and deliver to the Authority a ten year “Indicative Generation Capacity Expansion Plan (IGCEP)” covering 0-10 Year timeframe. This is required to be updated by 15th of April every year in the light of technological advancements, changes in government policy, progress and priorities of project execution entities.

The IGCEP is mandated to be a long term generation capacity expansion plan for the power sector which details the future electric power generation addition required for the power sector based on least cost criteria to acquire the optimum supply of electricity for meeting the future demand of Pakistan.

The plan is developed through a rigorous data modelling and optimization exercise based on the existing and future generation power plants, economic dispatch, existing policy framework, existing contractual obligations, Grid Code assumptions and natural resource allocations through the data shared by the project execution entities across the country.

Since 2019, we have been using the modern tools like PLEXOS and are building our team and Alhamdulillah, I'm very satisfied with it. And the last version also adhered to the 2019 ARE policy and for enhancing and sustaining 75% clean energy share in the national energy mix by 2030. It has been planned that by the year 2030 we should be producing over

88% of energy, electrical energy through our indigenous resources. And as I said that these days we are working on completing the next version, updated version, and this time we are not calling it 2047, we are going to call it IGCEP 2021. The Salient Features of the IGCEP 2047 are as follows:

- i. Alternative Renewable Energy (ARE) Policy 2019 targets considered.
- ii. Green House Gas (GHG) emissions to reduce 0.2 kg-CO₂/kWh in the national energy mix by 2030; enhancing and sustaining clean energy share which is presently 0.40 kg-CO₂/kWh in Pakistan, 0.41 kg-CO₂/kWh in OECD countries and 0.52 kg-CO₂/kWh globally.
- iii. The plan proposes 75% clean energy generation i.e. Solar, Wind, Hydro, Nuclear, Cross border by the year 2030.
- iv. The results show 88.3% indigenization of energy sources by the year 2030 which is 50% presently.

a. Reshaping the Energy Mix to Ensure Energy Secured Pakistan

Table 1 shows a snapshot of the future generation additions in the IGCEP 2047 base case. It illustrates that an aggregate generation of 57,060 MW and 76,330 MW to be installed by the year 2025 and 2030 respectively. Major share of generation consists of clean energy namely hydro, solar and wind which are 28%, 9% and 10% and 27%, 17% and 14% by 2025 and 2030 respectively. So, I think Zuberi Sahib also talked about this generation mix, and then Cheema Sahib also sensitized us on the importance of bright energy mix. Let's just see this situation, where do we stand in 2020 and then in 2025 and 2030. I think if we go to the next thing which is the tabulated form, I think it is more expressive. So, you see the first three rows, this RFO, imported coal, and RLNG, this is the imported fuel and in 2020, we are about 50% of this fuel. So, if we see RFO, it goes from 19% to 3% in terms of megawatts, so the share is reduced during the next 10 years, drastically reduced and then imported coal from 11% to 7%, and RLNG from 20% to 14%. But remember that these figures are in megawatts, this is not energy in terms of energy, it is more encouraging. So, RLNG solutions will be there but these are not going to get, I would say substantial dispatch in view of affordability, which was very rightly highlighted by Cheema Sahib in a great way. And then this cross border CASA 1000 and a very insignificant amount of 100 MWs we are getting from Iran. In view of this CASA 1000 project by year 2025 will be 2% and in 2030, it will come to 1% of the installed capacity. Now coming to this green area, renewable energy (RE), you see bagasse is consistent from 1% to 1%, then solar is from 1% to 17%, and wind goes up from 3% to 14%. Hydro in terms of percentage, it goes down, but you see that from around 10,000 megawatts, we are going to actually more than double of this hydro Power during the next 10 years, this is a huge task. There is a question that whether we have got the capacity of adding these 10,000 megawatts in 10 years or not? This is a big question. Now you see that this local coal from 2% to 8%, so from 602 megawatts will be over 6,000 megawatts, the natural gas, of course we know that the reserves are depleting like anything and quantum will be reducing. Nuclear will be higher as per information provided by Atomic Energy Commission so, we will be having over 4,407 megawatts of nuclear. But there is another very interesting thing with respect to carbon emissions. At this stage, if you see the first left bar in 2020, here you can see carbon emissions in kilogram carbon dioxide per kilowatt-hour. We start from 0.406 and by the year 2026, it is drastically reduced, and then it is almost sustained over the next 5 years. So by the year 2030, the carbon emissions will be

reduced to 0.2 from 0.406 and the second bullet, if you read, 75% energy will be from clean resources that is renewable energy i.e. RE, hydro, nuclear, cross border. And you know, cross border is mainly from CASA, which is hydro and that is also clean mix. In this whole sequence you can see that indigenization is also improved from around 60% to 88.3% by the year 2030 which is very encouraging.

Table 1: Summary of Future Generation Addition in IGCEP 2047 (Base case)

Generation Source	Year		
	2020	2025	2030
	Nominal Capacity (Mega Watts)		
RFO	6,488 (19%)	5,152 (9%)	2,475 (3%)
Imported Coal	3,736(11%)	5,297 (9%)	5,297 (7%)
RLNG	6,677 (20%)	6,677 (12%)	10,822 (14%)
Cross Border	0 (0%)	1,000 (2%)	1,000 (1%)
Bagasse	259 (1%)	913 (2%)	913 (1%)
Solar	500 (1%)	5,293 (9%)	12,793 (17%)
Wind	1,086 (3%)	5,806 (10%)	10,327 (14%)
Hydro	9,945 (30%)	16,253 (28%)	20,737 (27%)
Local Coal	602 (2%)	4,841 (8%)	6,055 (8%)
Natural Gas	3,010 (9%)	2,480 (4%)	1,504 (2%)
Nuclear	1,230 (4%)	3,348 (6%)	4,407 (6%)
Total (MW)	33,534	57,060	76,330

a. Energy Security

Long-term energy security mainly deals with timely investments to supply energy in line with the economic developments and environmental needs. The IGCEP 2047 proposes a diversified mix of generation – not relying on a single source of power generation but focusing on indigenous, clean and green generation for Pakistan which includes hydro, nuclear, solar and wind power generations in addition to contribution by local coal, nuclear, etc.

The IGCEP, in line with the government of Pakistan's directions to reduce burden of import bill and on the national exchequer, proposes massive investments in hydro, variable renewable and local coal power generation. Indigenization of power sources in Pakistan means that less reliance on uncertain foreign investments and foreign assistance which can, at any time, be rolled back in case of any kind of political or geopolitical scenario.

However, like any other country, having sizeable options of cross border power generation would help, in addition, to capitalize on the opportunities to address future uncertainties and prevent impediments in the smooth supply of electricity.

b. Cross Border Interconnections: Rationale & Strategy

Borders are opportunities, not the hurdles. Abundant clean energy resources are unevenly distributed throughout the world as well as in China, Iran, Pakistan, Russia and Turkey, so optimal utilization of resources is the key to global welfare and development. Factors like seasonal variations, diversity in time and demand pattern offer huge opportunities for business in the energy sector among countries. Not only cross border energy transactions result in cost savings through generation reserves sharing between the interconnected countries/systems, but also provide cost optimization during events of high marginal costs in the system. In addition to strategic and political benefits of setting up and sustaining a regional bloc, energy security is complemented in terms of diversity of sources. Intermittent wind and solar power needs to be integrated into a bulk power, smart grid to advance its development through synergizing the resources.

Cross Border Interconnections are inevitable based on ever evolving business dynamics of the energy sector of Pakistan. However, the government is required to make way for the cross border trade of electricity through enabling environment, harmonizing policies and setting regulatory regime to drive this trade of electrons across borders. I would say that there is a strong rationale in cross border energy trade because of seasonal variations, diversity in time (real-time difference), demand patterns are different and then the huge savings through generation costs is another very important point. In most of the international interconnections, they are doing they are sharing the reserves. Actually, because of this, a lot of savings in terms of money is made and we need to do it. It will be very difficult for Pakistan to cope up with the increasing size of power system and increasing demand by all the time increasing the generation capacity and adding to the National Grid, it will not be possible for us. What I understand that the government is seriously considering that they maybe allowing about say 5% additional load shading across the country, and I am talking of legal load shedding in the system because otherwise, it will not be possible for Pakistan to sustain, as Cheema Sahib emphasized about the affordability factor.

Then in addition to availability and sustainability factors strategic and political benefits of such regional grid are there. There are political benefits/strategic benefits for Pakistan and energy security is complemented in terms of diversity of resources. As I have said earlier

that the cross-border share is just 1% and that is extremely low. If we compare this figure with India which is connected with Nepal, Bhutan, with Bangladesh and with Sri Lanka, which was a bit difficult and expensive because of the undersea power transmission requirements, it is almost 40 %. So, their cross-border aspect is very strong and this gives the complement to their energy security. But in case of Pakistan, we are just going to have, maybe by next year, this CASA project will be completed, so there is a big gap here in our generation mix. Our cross border part is definitely very weak and we need to strengthen it further. There is a Chinese initiative and they plan to interconnect the whole world maybe in next 30 years or so. So, they say that intermittent wind and solar power needs to be integrated into a bulk power with ultra-high voltage, smart grids to advance its development by synergizing the resources. This is what I also believe that renewable is fine, but we know that reserves requirements are increased because of the intermittency of renewable resources but that increasing reserve requirements can be met if we share the reserves within these interconnected countries. So, the condition is that we need to interconnect with each other.

As an example, let's take India, this is some work which I had done when I was working at the SAARC Centre for Energy, we had divided India into five different regions being a very large country and this is also valid for South Asian region. The seasonal complementarity in SAARC region is very much clear, because if we see the monthly electricity load profiles, you see that in January you have low demand whereas, in Bhutan, due to severe cold they need electricity for heating purposes, so their demand in January is very high. But in Bangladesh, it is even lower than India. Same is the case for Pakistan, it is also low. We know that in Pakistan the demand comes down to around 7,000, 8,000 megawatts, sometimes less than 6,000 megawatts as well. Same is in February, which means that in these months' power can be exported to the high demand countries. This is of course theoretical until we have the policy framework, the regulatory framework and then we need interconnections market and all these things, but you see a lot of potential is there. In March, there is less potential. In April, now it is growing, in December, then May, June. In June, it is higher and then in July especially with respect to Pakistan, you see, our demand is very high in July. And the similarly in August, and then September, October. In October, there is no potential but in most part of the calendar during the 12 months there is a lot of potential because there is a diversity in terms of high and low demand. This diversity, this seasonal variation can be used as a strength for cross border interconnection.

Now, for requirements part I will just briefly touch them since a lot of the part was discussed by Mirza Sahib and then Zuberi Sahib. Broadly they are, one the policy framework, I would say, I will just add, maybe it has already been said but I would like to emphasize that the policy with respect to cross border interconnection is not there. Secondly, in terms of regulatory frameworks, we do have got our grid code but it does not provide anything, any provisions for cross border interconnections. So, if we are going to interconnect within this Golden Ring, then we need to have this cross border interconnection codes as well, this is very important. Then come the issues related to standards, benchmarks and then also the rules and responsibilities of the connecting countries and lastly the market has to be there. India has a very successful model of Indian web power exchange and they have been running it for about 7 or 8 years. Now they have also introduced the gas exchange just recently although it has a very slow progress but still, it is growing day by day. I think, we need to learn from Indian story or from other international stories, to get benefited as early as possible. I know of CTBCM, but like all professionals, I also believe that we are very slow

in realizing and implementation, we need to expedite our efforts, we need to make it a success and then we need to actually connect our market to other markets like we are talking of this Golden Ring and this is very important and critical. When there is a market then affordability issue will also be InshaAllah Tallah resolved.

Now, towards the end of my talk I have these five steps, this is my personal wish list that if I have the power to change the whole complex, I will focus on these five points. The first is to add cheap, clean megawatts through indigenous resources and technology and local technology is also very important. We need to have a water and wind turbines, power transmission and substation equipment and similarly allied equipment manufacturers in Pakistan. Secondly, make the grid smart and sustain it, that is important. Thirdly, we have neglected this area criminally, and that is the energy efficiency and energy conservation measures. Number four is regional inter-connections like this one, this Golden Ring to cater shortages or surplus. Whenever there is a shortage, we can import power, if we are interconnected with other countries, and whenever there is a surplus, of course, we can export it and of course sharing the reserves that is the eminent optimal utilization of the resources. And finally my elder brother Cheema Sahib wonderfully explained that this is basically a leading part of our country that ensure effective governance across the sector that critically important. Whatever we do, whatever we achieve in terms of megawatts, in terms of money, if there are governance issues, we cannot progress. We need to if I am there, this number five should be in terms of order, should be the number one priority area for all of us. So, thank you very much this is all I just wanted to share with you.

- **Mr. Hasnain Reza Mirza**

Thank you Usman Sahib, you have very well presented the different concepts and here I have got an idea which I think directly relates to you and Cheema Sahib being the elders in the IEEEEP, why not the IEEEEP becomes the professional organization, and why not you initiate or make a sort of expert group and give them the task to prepare a draft of national integrated energy policy or plan. And also as you were saying the cross border interconnections policy that will also be a part of that integrated plan. I think the IEEEEP, being the professional body is supposed to cater for these type of things. Why don't you people prepare a draft, give it to the government, talk to the government, we will all to talk to the government that okay, here is something which is prepared by the professionals and the stakeholders and give us the reason why it cannot be implemented. This is one of my suggestions. I will first request General Sikander to conclude and then Mr. Abid Sherwani to say final words. General Sikander sir please.

- **Lieutenant General Sikander Afzal HI(M), (Retd.)**

Thank you very much Hasnain, just let me be very honest to experience the wonderful discussion today and having heard things from expert like you, I mean each one of you, and the stories and even for examples today, there was a story or a write up or comment about energy and its implications for Pakistan in English newspaper, one keeps wondering that how come when we have such a galaxy of experts within Pakistan we still cannot resolve our problems of energy sector. One always comes back and finds that our beurocrates and politicians, instead of professionals, dictate what to do and how to do. What, are there less minds within Pakistan? Yes, I can understand that in certain cases when you go in for foreign funding then you have to, I mean, be dictated by certain constraints which are placed by the so called donners. But then the best for our country, for our nation, for its future and for its security would be, in my opinion is to devise a policy for ourselves. Our

experts in Pakistan have successfully shown and proved time and again, over the years that we are capable of doing this if permitted. We had realized that one way to overcome the threat was to devise our nuclear policy and we did it and then we stuck to it, no matter what came we had hardships but we took a stand. Similarly, when we realize that in this century and the centuries to come, the strength of the nation will rely primarily on its economic strength. And for the economy to grow, one of the main components is energy security. What we need to do now is, probably, devise a policy, made for Pakistan and forget about what others say and then keep struggling in the set direction. Even at the cost of, you know lagging behind in other sectors, because that will give us the economic strength. I think it is high time we devise an energy policy, we devise the economic policy and then we stick to them, make them effective and implement them regardless of who comes, what may be his goals, just keeping the national interest in mind and as supreme. I thank all the wonderful speakers for their talk and I thank UMT, Abid Sherwani Sahib, his team for helping us, organize all this and connect us through these virtual conferences system that you have come up with.

- **Mr. Abid Sherwani**

Thank you very much Mirza Hasnain Sahib and General Sikander Afzal Sahib and my other worthy colleagues. I am really very grateful to my worthy speakers, Cheema Sahib, Salis Usman Sahib, Zuberi Sahib, and Hasnain Mirza Sahib. Your presentations and talks are really scholarly and touching the heart as well. All of you have presented the real situation of the Pakistan's energy resources and the potential as well and have also suggested meaningful and optimal recommendations as to how we can overcome all these energy crisis and challenges and how we can make prosperous our beloved country by utilizing all the resources. Pakistan is very lucky that we have a lot of resources in all aspects like wind, solar, hydel and even natural resources like coal, gas and oil as well. But the main concern is the initiative and the initiation and how we can optimize all the resources too and how we can capture all these resources and how we can enable them for our country, for our economy, for our industry, for our domestic use. Pakistan government is doing a lot to overcome these challenges and to reduce the hurdles. But the journey is still underway and if we have strong will and consistency in our policies then Inshallah one day, we will prosperous and will overcome all these challenges. I am so grateful to my colleagues of ORIC, the University fellows and all the speakers. I am sure that we shall continue this sort of seminars and webinars and we will Inshallah accomplish our goal very soon. Thank you very much.

6.3. NATIONAL FOOD SECURITY.

- i. Engr. Mr. Hasnain Reza Mirza.
- ii. Lieutenant General Sikander Afzal HI(M), (retd.).
- iii. Dr. Mr. Iqrar Ahmed Khan.
- iv. Mr. Abid Hussain Sherwani.
- v. Mr. Asif Sharif.
- vi. Dr. Mr. Nauman Khalid.

6.3.1. Hasnain Raza Mirza:

Thank you Naveed, I welcome all of our participants and those who are watching on the Facebook in the background and at the UMT and everywhere else. I welcome on behalf of Golden Ring Economic Form (GREF) all of you to this webinar on food security. I will just briefly induce GREF to those who are new and then introduce our speakers.

GREF is a policy research think tank working on strategic economic cooperation between the five countries; Pakistan, China, Iran, Russia and Turkey which form the Golden Ring. GREF has been working on different aspects of multilateral mutual cooperation and also lobbying for Pakistan. We have been organizing different conferences, panel discussions, seminars and webinars on national economic and strategic security issues. We have been working closely with our national and international counterpart organizations and certain universities for different types of researches. We have already completed a series of two webinars. First one was on the Shared Economic Recovery with China, Iran and Russia and the second series was on the foreign policy, security aspects and media policy. This series is on economic security, energy security and food security, this is the last of this webinar series.

Now, I would like to introduce quickly our speakers. We have very experienced learned speakers like Dr. Iqrar Ahmad, who is the Vice Chancellor of Faisalabad Agriculture University at prest. He is a big name in agriculture and food sector. Then we have Mr. Asif Sharif who is a renowned agriculturist and expert who has contributed a lot towards the capacity building of farmers by introducing them with scientific methods of cultivation and getting high yields. His contributions in reshaping to modern lines the agriculture sector of Pakistan are commendable, he has a lot to share. Then we have a young agriculture researcher from UMT Dr. Nauman Khalid, he is working on marine biological food sources.

We have sent to all the speakers' Concept Paper of this webinar and requested our speakers to answer our four questions. So now today, we expect from our speaker to have very specific replies and also their recommendations. Everyone will have 8 minutes. Once again thank you very much. Now, I would request our Chairman, Lieutenant General Sikander Afzal to kindly say opening words. Sir, over to you please.

6.3.2. Lieutenant General Sikander Afzal HI(M), (Retd.)

Dear friend's, ladies and gentlemen, Assalam-o-Alaikum and a very good afternoon to everybody. I am the Chairman of the Golden Ring Economic Forum, commonly known as GREF which is based in Lahore and focuses on national economic security issues in the light of geostrategic developments in the region and internationally which affect Pakistan and how Pakistan can benefit from these evolving, changing developments in region surrounding Pakistan. This Think Tank is the idea of business community of Lahore and

focuses on ways and means to enhance economic activity between Pakistan and the rest of the Golden Ring countries. One objective we have laid down for ourselves is to lobby for Pakistan focusing on the ways and means to strength the national economic security.

The earlier webinars focused on ways and means as to how Pakistan can capitalized on the changing environment in order to adjust its national security policy, foreign policy, economic policy and energy policy to its advantage particularly with reference to countries of the Golden Ring. The 1996, World Food Summit defined food security as a situation that exist when all the people at all the time have physical, social and economic excess to sufficient safe and nutritious food that meets their dietary needs and food preferences for a healthy life. This definition incorporates several needs like the availability of food, excess to food and the food to be culturally appropriate since, there are many factors in today global environment that exaggerated food security.

Four elements build the framework of food and nutrition security are mainly availability, access, use and utilization and stability. Typically, food security is being taken as related to availability and excess of food stuff, yet the threat to food security also lies with urbanization, income disparity over population, ecosystems, degradation, animal health, etc. Therefore, it is of paramount importance to evolve a food security policy ensuring sufficiency benefits to the grower and the market. This webinar is expected to bring out lessons of how Pakistan can draw maximum benefits and adopt a proper food security policy under the changing environment especially by benefiting from the experiences of different Golden Ring countries namely Russia, China, Iran and Turkey.

6.3.3. Dr Iqrar Ahmad Khan

Salaam o aleikym. Thank you very much for your kind words.

As you've said that in national economic security, food security comes at the top and then come everything else. Now I would like to start my talk by answering basic questions.

- Q. No.1: How food security contributes to overall economic and national security of a country?
- Q. No.2: What lessons can Pakistan learn from the Golden Ring Countries experience in food security?
- Q. No.3: What policy changes or initiatives are required to have a national integrated agriculture and food security system?

To answer these questions, I would start with the story of past 60's year from 1962 to 2000. Back in 90's onward we have every year, one after the other, different crises which can be attributed to many issues and policies. We had a 4.3% annual growth initially and in 2015 it was kind of stagnant around 2.6 and from 2015 to onward we started going even further down. So, we are being faced with the challenge of food security crises. This was further deteriorated due to factors like productivity of human resources, energy crises, stagnant cultivation methods, etc. basically it was failure of governments to give priority to agriculture and food sector. We have also failed to modify our crops cultivation in response to the climate change challenges.

I would like to simply say that to make our land and water use productive under the complex climate change effects starting 2010, every year there is at least one formal climate change challenge, we have major floods in the River Indus and its tributaries, droughts in parts of the country, untimely rains in other parts, etc. The climate change not only effects crops but

also effect the micro climates nurturing the disease, insects and the locust situation in the past years. Locust is a migrant pest which has now become resident because local temperatures now favor local breeding. It used to breed in Horn of Africa and then used to migrate to Middle East and to south East Asia but now it can breed here in different parts of this country.

For over a long period of time we used to have four crops and then we introduced the fifth crop of Corn, which became the major crop during last 40 years. Our climate, ecological system and topography allow us to have a huge diversification for some 100 plus economically significant crops and livestock. In the past our policy elements are usually focused on three or four crops which are wheat, cotton and rice because of the industrial and export segments. All the attention was to promote these crops and their yield but in practical, if you look at the last 20 years' profiles, we are near stagnant and in case of cotton we have actually declined. And looking at our export marketing and sales we have lost our markets too just because of absence of proper marketing infrastructure as well as the legal framework. We still have, in majority of the regions, 100 years old cooperative kind of marketing arrangements, during 60's some changes came but then again they became obsolete. The second issue is of productivity. Our productivity and quality, as compared to other countries, not very advanced like Europe and US but within our region, is extremely low. This is due to the fact that we lack applications of advanced implements, mechanization techniques and tools like data from image processing, use of drones, use of available analytical software's, where the world has gone. All these things help in ability to reduce the cost of production, increase in per unit productivity and enhancement of quality to international levels.

Another issue is of migration of farm workers from rural areas to urban areas. They are preferring to work as black labor in cities rather than working in agriculture due to old feudal system. Our present laws and system unfortunately, do not provide any remedy or solution to this problem. Agriculturally speaking, preparing food security plans without discussing the rules and procedures for development is nearly a fatal exercise and specially if you are thinking of benefits by joining the agriculture club of Golden Ring countries.

If I have to discuss one element, I would like to stress upon investments in research and development that brings us up to date with the pear technology. Here, the top of the list will be the seed sector and it the seed sector is looked after properly starting from developing of new robust to disease and hybrid seeds and then mechanized way of planting them. Here I can give a lots of examples of high income and low income countries which have done a lot of R&D to develop their agriculture sector for food security, but I am being reminded that I have used up my time so I would not go in those details. Since, we are not investing in research and development system through research organizations and universities we cannot sustain our food security. At present, we are only paying for the salaries of staff, utility bills and basic maintenance but nothing for investment into research. I would not tell no more details due to the time constraint but at the end of the day I strongly believe that if we put our systems right they are capable of delivery, we've fertile land, plenty of water but we're basically inefficient water users considering climate change. We also have data which allows us to modify and optimize the present systems of use of land and water resources. We have done it once before in 1960's through Green Revolution campaign and there is no reason why we cannot do it again. Now I will end my presentation by giving following recommendations.

- i. Wheat yields stagnation can be broken with a minimum annual seed replacement of 50% of a million MT required. Conversion from broadcasting method to seed drilling can bring a substantial improvement. Breeders need to replace Norin-10 dwarfing genes (high input requiring but lacking stress tolerance) with new GA-insensitive set of genes (stress tolerant and climate resilient). The race for release of new varieties could be slowed down by breeding durable rust resistance. There is business for seed and machine planting. Equally important is the replacement of current combine harvesters causing huge field losses. Breaking yield stagnation of wheat will not only address food security challenge but also offers space for Canola as a Rabi edible oil crop.
- ii. Cotton seed supply chain malpractice, pest pressure and competition with other Kharif crops require a new strategy for revival. Xinjiang model of dessert cotton production be followed using determinate varieties, machine planting and harvesting, mulching and drip irrigation. Relocation of cotton belt into Baluchistan has a great potential.
- iii. Soybean is a Kharif crop which needs urgent attention not only as an import substitution but also as a legume to restore soil health and fertility. Replacement of current Kharif crops is less likely to succeed but intercropping in Maize and Sugarcane is a high possibility. That can be done by proper varieties and mechanization. Soybean is a highly researched crop, being one of the top three grain crops in the world. Soybean can also be included as a mix in the silage corn crop to enrich animal feed and fodder.
- iv. Sesame is another Kharif alternative with as much of export potential as of rice but with much less water requirement.
- v. There are several crops (Potato, Turmeric, Ginger, Banana, Sugarcane, Date palm, Strawberry etc.) which are grown using tissue culture seedlings/tubers commercially. Many vegetables and ornamental plants are grown from expensive hybrid seeds. There is a huge scope for the private sector to create a seedling business of tissue culture plants and hybrid seedlings.
- vi. Collaboration in seed production with international partners (Chinese, Iranians, Russians) is a strong possibility. We already have a success story of Turkish (Yukshal) partnership in a select group of vegetables (Mian Shaukat at Mamokanjan). Similar partnerships in development of several other vegetables, food grains, rice, fruits, fodders, edible oil seeds and olive are needed.
- vii. Investment in training and capacity building of farmers and SMEs for value addition.
- viii. Mechanization through service providers, GIS, Remote Sensing, Drones, Image Processing, Sensors etc. Machinery manufacturing B-B partnerships with China, Iran, Russia and Turkey are strongly recommended.
- ix. The case of HEI should be debated and redesigned to make it success.
- x. Promotion of homemade milk products and home grown vegetables as a Cottage Industry is needed.
- xi. Production of medicinal herbs for herbal medicine need to be supported and its export to be facilitated. China, Iran and Far East are very big markets.

- xii. Market reforms: Each commodity has a unique critical element or a value capture, deserving attention.
- xiii. I have avoided discussion on fertilizer applications; the key word is balanced applications.
- xiv. Peri urban agriculture is an unattended segment.

Thank you very much for listening to my long speech.

- **Hasnain Reza Mirza**

Before I request Asif Sharif sahib, Abid Sherwani sahib is here and would like to say a few words. Abid sahib please.

6.3.4. Mr. Abid Hussain Sherwani.

Asslam-o-Alaikym. We just had a very impressive talk by Dr. Iqrar, no doubt he is a legend in our agriculture sector and is a very towering personality. He has thrown the light on the present, past and future strategy for national food security. Food is the basic need of every living being in the universe that includes us humans too, regardless of the fact that one is from rural, urban, poor or rich side, everybody needs food. Particularly, the availability and affordability of basic food becomes very critical when you have a large population, then it becomes the issue of survival of a country. Unfortunately, the in present days we are facing lots of challenges of food shortage due to several factors. Our population is growing and but the food growth is not compatible with our population growth and we're facing a lot of scarcity in this. So, this webinar has been planned to discuss the important issues of food security and survival of not only our lively hood but the region around us. As we know that a huge population outside Pakistan also depends upon the food and agriculture sources of Pakistan as well. Therefore, the challenge gets even bigger that how can we grow food not only for Pakistan but also for the neighboring countries, particularly, Afghanistan and some Gulf Arab states. There are some 600 million people who depend upon Pakistan. This also shows that there is big opportunity for Pakistan to export its agriculture and food products.

The other thing is the value addition in agriculture, we have been growing wheat, rice corn, fruits, vegetables and every other crop but we are not adding any value to it by means of food processing or quality enhancement. Then another challenge is that we have deficiencies in our seeds and cultivation methods, we don't use new technologies, these are very big challenges. These are the areas where we can learn and take advantage from the Golden Ring countries experience. Basically, Pakistan can become the food basket, as Mirza sahib has said earlier, for the region hence effectively playing the food diplomacy.

At the end I would like to thank Dr. Iqrar Ahmed, Mr. Asif Sharif and Dr. Nauman Khalid for joining us and I would also thank General sahib, Mirza sahib and other GREF members, my ORIC team and the UMT Department of Agriculture. Thank you very much!

6.3.5. Mr. Asif Sharif

Thank you very much Abid Sahib. Asslaam aleikym every one. I also thank GREF for inviting me as speaker in this webinar. I am not a scholar but I am a field agriculturist. I have taken it upon myself as a mission to develop and enhance the capacity of my fellow farmers in producing high quality, high yield crops by the way of practically training them through my farms and sharing my experience. And I am proud that I have made some very good

successes without any interventions or support from the government. This also shows that our farmers have the capacity to grow if given right and practical advice.

The way we're facing different agriculture crises one after the other, is basically we are not considering and taking into account weather and the soil conditions and the practices which are being followed by the world. One of the item is the internationally available data of agriculture sector collected all over the world specially for the treatment of soil and the climate change. Almost all of the countries are benefiting from the current agriculture production systems except us. They have worked out the ways and methods not only to contain their land resources but also to curtail their soil degradation because if the soil is good then the nation is good. They have also worked out alternate crops in the light of changing weather patterns. We need to watch and adopt accurately according to our national ecosystem.

When we started industrial revolution back in 60's, the major devastated actions we took were one, spoiled the agriculture land and soil by dumping industrial wastes, both solid and liquid, two, increased the air and atmospheric pollution and three we ruthlessly chopped off our trees disturbing the ecosystem. Keeping the soil naked has harmed the whole globe. Even now if we control and take remedial measures, our agriculture system can give tremendous amount of success and we will be able to grow crops, very good quality crops with good returns and very low costs. The two major and most important factors for the farmers and producers are (1) Cost Production and (2) Quality of produce.

If he meets these criteria, then he can sell his product easily anywhere and everywhere in the world. So with the change in production system we will able to achieve reduction in cost of production for instance. The consumer loves the good quality so what we need to do is, to educate the formers.

Unfortunately, 60% of our population is agriculture depend but there is not a single school or training center for farmers. I, along with some of my farmer friends, have establish training center on my farms where we have been very successful in training and uplifting the capacities of our local farmers. We have never received any kind of funds from anywhere, it is all on self-help basis. Yet we have been able to develop a system for food production which has changed the agriculture system and reduce the costs. They have improved their yields by 40%, reduced water use by 80% and the Nutrition Density has increased. We are also working on designing machines specifically for our requirements and needs and introduce them after the testing process. Towards the end what I would strongly suggest that we need to make a system to educative farmers and communicate with them through media so that they can produce good quality food for everyone.

With this I thank everyone and if you have any questions feel free to ask please.

- **Hasnain Reza Mirza**

Thank you Asif sahib, definitely you have commendable achievements which need to be propagated for the benefit of other farmers too. Now, I will request our last speaker Dr. Nauman Khalid from Agriculture department of UMT to share his views.

6.3.6. Dr. Nauman Khalid

Your first question "**How food security contributes to overall economic and national security of a country?**" is very tricky, but at the same time it's very important, since food is

one of the vital components of survival. In my opinion, especially with reference to Pakistan food security is not more important, because most people think that we are producing enough food, probably due to increased horizontal farming overtime. The problem behind is how we can distribute that food and how we can think that food can overcome micronutrients deficiencies like zinc and iron. Lastly, that available food can maintain overall body structure and support body growth demands. If we can say food security is important for economic and security needs, then governments focus on strategic plans that sees agriculture and food processing at top, but unfortunately, the government of Pakistan has recently launch think future technologies like 3D printing, artificial intelligence, augmentation, smart robotics etc., where is the word agriculture, where is the word food that's all finished. I believe that the food security is important from economic and security prospective. In summary, the government of Pakistan must put the food security and agriculture as one of the top for future technologies development, because the survival of the population, survival of country and developing of the country and all the people entirely depend on the agriculture and the food availability and as well as bioavailability.

Moreover, government put less focus on food security because we believe that we are producing enough, the statistical data shows the same trends. In my opinion, distribution supply chain so called food supply chain is completely flopped in comparison to other golden ring countries like China, Turkey, Russia and Iran. In these countries, what they produce, they distribute it properly and set the cooperative platform to listen the problems of farmers and set the quality parameters by using quality techniques like GMPs, Global GAP etc.

As food quality expert, I proposed here three pillars or parameters for GREF, first is education, second is training and third is knowledge sharing. These three pillars are lacking in all institutes of Pakistan. If we see the Pakistan research from last 6 years research on agriculture an on-food science. The authors published mainly on traditional research on agriculture, the novel tools are entirely lacking like agriculture simulation, agriculture forecasting, climate change and agriculture, carbon foot printing etc. moreover, preservation technologies that Mr. Asif Sharif develop not entirely utilized in Pakistan. The productivity of Turkey and China is on high especially in agriculture, they utilized modern tools well and last 10 years articles show the trend and improvement. The most pity thing is that, if we put complicated words or new technologies in research proposals of Pakistan, its straight forwarded rejected without solid comments. This trend shows our reviewers lack concepts on new knowledge and reluctant to approve funding for new research. That's the reason, I am stressing, integrating research focus on three parameters Education, training, and knowledge sharing. All of these suggestions can be fulfilled by establishing strong research network with China, Turkey and Russia. The research collaboration by exchanging students and researchers helps to increase agricultural yield and value adding exportable products. I recommend establishing GREF Institute of Agricultural Research and Policy to effectively boast agriculture research among partner countries.

Keeping your last question in mind, we can value add the crops by adding micronutrients to overcome micronutrient deficiencies. Pakistan has done enough work on supplementation and fortification. The desirable results are unfortunately weak. The idea of dietary intervention is highly needed, and Pakistan need to focus on its coastal areas to increase the value of seaweed. The seaweed is rich in iodine, pigments, polysaccharides, iron and zinc. Moreover, its exportable value is over 9 billion dollars. Pakistan have over 900 km

coastal zone and have diverse seaweed, that can be fully utilized to overcome micronutrient deficiencies, and people can earn enough money by selling either raw seaweed or process it to make different polysaccharides

Last thing, I like to indorse all statements of Asif Sharif sb we need to focus on novel technologies, we claim to have best irrigation network in Pakistan, but we need to save the water and not to move to the horizontal farming. Thank you very much Dr. Nauman Khalid. You're very good answering the question and took the point. It looks simple, but it was deep questioning.

Thank you very much Dr. Nauman Khalid. You were very good in answering the questions and to the point. Now we would like to open the house for the questions. May I request General Sikander sir, if you would you like to have any question and then we also have our friends from Beijing, China, he is also the Chairman of GREF China. He has just informed me that 18th National Conference on Agriculture will be in the second half of this year which could be of great benefit to Pakistan. Mr. Chen has requested GREF to propose good leading experts as speakers for the Conference. Mr. Chen we will soon let you the names of speakers. Thank you. Now questions please.

- **Ambassador Masood Khalid**

Mr. Mriza Aslaam O Alaikym. Walaikum salaam Sir. I want to ask a question to respected Vice Chancellor Dr. Iqrar. You know Pakistan and China cooperate with each other under CPEC, the second phase of CPEC is very large and an important sector like agriculture is also there. Soon a meeting of apex body of CPEC, the Joint Cooperation Committee, which supervises and oversees the implementation of specific projects. My question is whether Dr. Iqrar you are involved in any manner in the formulation of some recommendations for the federal Ministry of Food Security or from provincial Ministry of Food and Agriculture? I mean that the Government of Pakistan will be submitting certain proposals for the consideration of our Chinese friends to help Pakistan improve its food security. Dr Iqrar you have listed a number of proposals; I would like to ask you to specify two or three main areas to begin with where Chinese friends can help us in improving or agriculture productivity?

Answer:

Thanks Masood sahib, when I was in Beijing you have honored me and hosted us. Sir I am not part of any Government Committee or meeting but I keep on discussing issues on open forums. The Chinese Embassy has hosted a visit of an Agriculture Commission from China recently where very elaborate suggestions were made by me but the question is that whether the Government of Pakistan is willing to give any value to them. If you can, do let me know I would be very happy to support that. Sir thank you so much its pity. I want to add something we hosted 22 webinars and their reporting are available with the Pakistan Academy of Science. I would be very happy to support this. Thank you very much.

- **Asif Sharif Sahib.**

Same question to you sir.

Answer: No sir, I am not involved in any planning work that might be necessary to forward or jointly set the objectives of China Pakistan cooperation on agriculture but sometimes they keep on asking certain questions. Recently, I was attending a meeting Chaired by the Prime Minister and before that there were several meetings with Ministry of National Food Security as well as Pakistan Agriculture Council where I also made presentations and

presented solutions to our problems we are facing right now, as country. I think they were very well taken I hope things will start getting better in the future.
Thank you Asif sb.

- **Mr. Chen Jiancheng.**

Thank you. Today it has been clear that we can have very good experts from Pakistan for our food security cooperation between China and Pakistan. As you know that we are cooperating with the Chinese Ministry of Agriculture for the 18th International Conference on Fertilizer and the 11th International Conference on food security to be held next year where may be 100 ministers from different countries attend. There will be several big international fertilizer companies, research organizations, universities, organic farming companies and so many others will be present there. The Chinese concept is that food production and food security is an issue of the whole world and not of a country therefore, everyone must help the other to improve their production.

Now, I want to ask one question to expert Mr. Asif; this issue of international cooperation especially for the high level designing. I want to ask how to promote the corporation with different country's producers and growers. I want to know Mr. Asif opinion high level designing for food security. Give me some suggestion on this please.

- **Answer:** Mr. Chen Thank you for asking an important question.

Let's a look back a little bit to know what happened; the vegetation on this planet earth has been depleting for over last 150 years without any recourse to its replenishing and in just last 50 years we have drastically wasted everything with devastating impacts on the world. We have spoiled the soil, wasted the water creating water issues, the climate issues, the food quality issues and the food security issues. We must be think about it that where we can draw a line, we are actually at a cross road of modernization or going for the restoration of the natural ecosystem. So, we must first discuss the process which can improve the sowing of seeds and use of fertilizers which can actually reduce the carbon footprint in the atmosphere and bring the carbon back into the soil. Since, the soil has three times more carbon than in the atmosphere and we are releasing carbon every day when we cultivate the soil. So first we need to develop a process which is ecofriendly and good for everyone.

Let us take the example of Cambodian rice production they are mainly using inundated lands for rice cultivation instead of spoiling dry lands. We can also produce rice with such spoiled soil where we can reduce the water use up to 90% to produce a better quality and high yielding rice. Same is the case for other sugarcane. We need to understand how a plant needs its water, there are four factors which actually determine which plant needs how much water, (1) the leaf surface area of the canopy, (2) it's the wind velocity, (3) the ambient temperature and (4) is how much it emits in the air. A drop of water which is passing through the roots up to the leaves and then evaporating from the leaves is the only water a plant needs, may it be a rice, corn, sugarcane or whatever. In flood irrigation process more than 90% water is being evaporated in the atmosphere which we are pumping out of ground aquifers. As a result, the subsoil water level is dropping whereas, and millions of tons of excessive water is floating in the air actually causing the devastating, rapid climate changes. So, the solution is in the soil. Second part is how can we disseminate that knowledge to all farmers in all the countries and then of course we need to train them with new sets of processes, if we want to sustain as a human kind and a living kind. Such kind of

conferences, in my opinion are the best model where not only the policy makers but also the farmers are present.

- **Mr. Chen Jiancheng.**

Yes, Thank you very much. There is another part I would like to inform and that is the mass cultivation of medicinal herbs. As you know Chinese are number one for producing herbal medicine and therefore, it has a big market of Chinese medicine material. We are looking at international sources from where we can import a lot of these materials, each country has its own specific Chinese medicine material and we have found out that Pakistan can produce such herbs commercially in large quantities because of your weather and soil. For example, a large Chinese medicine group imports a lot of Chinese medicine materials from Nepal so we have asked the Chinese people to go there and to invest for producing these materials there and then import them to China. So, I mean may be this could also be one of the ways for the cooperation in agriculture. If we can cooperate to produce, to export, we can help each country.

- **Asif Sharif.**

You know some of such herbs are produced in wild naturally and a small quantity is produced commercially in Pakistan. The real issue is capacity building since, we do not have volumes we do not have the capacity. But obviously if there are volumes and good returns we can easily produce these herbs and export to China and elsewhere. Pakistan is a beautiful country and has different weather conditions so; we have different type of soil conditions. We can grow everything which other countries need. We shall definitely welcome investments from China in this field, kindly let us know if there is a concrete proposal so that we can move forward on it.

- **Abid Shirwani.**

Thank you very much all of you and GREF members. This was a wonderful webinar, we have discussed at length the food security's past, present and future challenges and strategies as well. GREF will send all the recommendations made today to the related government organizations and then let's see how they benefit from them.

GREF Head Office:
71-K, Gulberg III, Lahore, Pakistan. Ph: +92-42-111-000-083, Fax: +92-42-35761296
Email: info@gref.org.pk URL: www.gref.org.pk