A QUARTERLY UPDATE FROM THE SOCIETY OF AFGHAN ENGINEERS

SAE eNEWSLETTER

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Dear Colleagues:

This issue of the SAE eNewsletter (newsletter) features news about the 2014 annual membership general assembly and 2014 election.

The membership general assembly was held on December 20, 2014 by teleconference. Dr. A.S. Rahim, the keynote speaker delivered a speech about Engineering & Geologic Aspects of Landslide Susceptible Badakhshan. His speech is included in this issue of the newsletter. Also, there an article about by Mr. M. Nouri about sediment management in reservoirs of Afghanistan.

The year 2014 was the election year for the SAE president and 9 members of the board of directors. The report of the SAE 2014 Election Committee is included.

We are looking forward to the receipt of your technical news, articles, comments, suggestions, questions, and opinions about SAE and this publication.

Very Truly Yours,

G. Mujtaba, MS- CE, P.E., CPM; Editor- In- Chief, SAE eNewsletter

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GREETINGS FROM THE SAE PRESIDENT

Dear Members of the Society of Afghan Engineers and Readers of the SAE eNewsletter:

I am honored and delighted to serve the Society as president for the next three years. I have no doubt that with the active participation of our members and the new Board of Directors we will be able to set new goals and reach great milestones that could only be dreamed of when the organization was formed more than 20 years ago.

With the recent presidential election, Afghanistan has begun a new journey with the promise of positive change in all aspects of life. The promise of social justice, transparency, economic opportunities, and reconstruction has opened the door for civil society to become more involved.

The Society of Afghan Engineers (SAE), the largest professional organization outside Afghanistan, has a wide pool of members in all disciplines of engineering. Given the talent, expertise, and assets of our members and board, I am both excited and hopeful that together we will be able to make a large and positive contribution to the rebuilding of our beloved country.

I would like to welcome and congratulate seven new and two re-elected members of the Board of Directors. I look forward to working with them as we embark on a new journey in managing and directing SAE for the next three years.

I would like to thank Ustad Ghulam Mujtaba, former president of SAE, for his commitment and service to the organization. It has been a great honor to serve alongside him as vice president for the past three years. I wish him the best and sincerely thank him for his hard work and valuable contributions to SAE throughout the years.

I would also like to thank SAE's former chairman of the Board, Mr. M. Qasem Kadir, and the entire former Board of Directors for committing so much of their time and effort during the past several years to improve the Society. They have represented SAE exceptionally well. I wish them all the very best as they depart the Board with over 6 years of outstanding service to the organization and Afghanistan. I hope they will continue to be involved and share their knowledge and experience with us.

Today, I look to the future of our organization with excitement. We are in a much stronger position than ever before to make our vision for the future a reality. However we recognize that there is still a lot of work that needs to be done to help our beloved homeland live up to its full potential. That is why I need each and every one of you to continue the great work you are doing and to bring fresh new ideas for how the Society can grow and continue to make a positive impact in Afghanistan's development.

In order to realize this potential, the Executive Committee and the Board of Directors together need to evaluate our current status to determine where we go from here. We need to build on the organization's past success and continue to move forward. We must recognize our challenges and eliminate barriers to becoming more effective and helpful.

Over the next three years, I want to focus on growing, sustaining, and developing our internal capacity to provide needed services to the relevant ministries in Afghanistan. I want to focus on outreach and

engaging our young Afghan Engineers as well as experienced members of the Society to become more involved. As president, I welcome new challenges and I am excited to create an even stronger professional environment. I envision SAE as an incubator for innovation, cultivating new ideas, practical solutions, and benchmarks for progress. Furthermore, I expect SAE to forge strong partnerships with both the relevant US and Afghan government agencies.

It is truly an honor to serve as SAE's president for the next three years. I will do all I can to continue our growth and lead this outstanding organization to even greater heights. I know that together we can forge a new future for Afghanistan.

Sincerely,

Atiqullah Panjshiri

President, Society of Afghan Engineers

GREETINGS FROM THE SAE CHAIRPERSON OF THE BOARD OF DIRECTORS

Dear fellow SAE Members and Readers of the SAE eNewsletter:

It is with great pleasure and pride that I take up my new role and responsibilities in SAE as Chairperson of the Board for the next three years and welcome, at the same time, congratulate the incoming President Mr. Atiq Panjshiri and the elected Members of the Board of Directors.

Further, I would like to express my sincere gratitude to Ustad Ghulam Mujtaba Khan the former President, Mr. Qasem Kadir, the former Chairperson and all outgoing Board Members for keeping the Society alive and volunteering their time to serve. I can assure them that SAE look forward to their continued contribution and together with the incoming elected Members, raise the Society to the highest level possible to achieve our goals and vision.

I wish to express my belief in the unity shown by SAE and its activities in serving Afghanistan. I believe and support the goals and objectives of SAE and the bylaws that form the foundation

for this noble purpose. We should always remember the most important element of SAE which has been the mutual respect we have for our bylaws and for one another to hear and respond to every Member's voice and opinion.

I believe SAE must play a significant role in contributing to the reconstruction of Afghanistan if we come together not only here in USA but from all over the world and pool together in the sharing of ideas, talent, and knowledge to achieve our goals and purpose. To this end, I beseech you fellow SAE Members to commit to this valuable venture. Please remember that every input/idea no matter how small is very important to the Society.

My goal for the next three years is to team up and work with the newly elected Members and together bring the Society to a higher level of recognition not only by the Afghan Government but internationally as well to include multi-lateral funding organizations that have the potential to fund reconstruction and capacity development initiatives in Afghanistan.

My vision is to see the Society operating at a higher level and getting recognition as a professional technical entity by the Afghan government as well as the international donor community in overseeing critical development projects implemented in Afghanistan.

I trust and look forward to the next three years for each one of us to work tirelessly and give their best possible service for our beloved Afghanistan.

Very truly yours,

Sohaila Shekib

Chairperson, SAE Board of Directors

Responses to SAE Members Comments and Suggestions

The editor has received the following comments from the SAE members:

Comments from Ustad Hafizullah Wardak:

In his email to SAE members Mr. Wardak, former professor of Kabul University, and current member of SAE Board of Directors has sent the following email to SAE members on December 25, 2015.

Dear Respected Members of the Society of Afghan Engineering (SAE) Salaam Alaikum:

I hope this email reach you in good health and happiness. The successful General Assembly, yearly meeting, held on Saturday (12/20/2014) deserves commendation and applaud. Thanks to Ustad Mujataba Khan and Manan jan for keeping the meeting focus on agenda and on time. Also, thanks to Ustad Rahim for his excellent and enlightening presentation.

Mohteram Mommandi Sahib shared an outstanding example of his old great work in Kunduz Khanabad project - not to use flood irrigation in some location in the northern part of Afghanistan may seems trivial but it is a sound technical solution to a complex engineering problem that has long lasting impacts on public life and wellbeing's.

I would like to share and bring the following few points related to membership, and path forward for the new board to your attention:

1) Membership: The total casted ballots of 14 members, if I remember correctly, display an ominous situation and a huge challenge for the SAE board. How to increase participation of members should take a high priority. A society cannot survive without active participation of members. The low-slung participation of members must have reasons.

a. A mailing list of around 650 (?) was mentioned in the meeting- the 14 votes is a low 2% participation.

b. Possible cause- ? Not sure. One issue that deserves attention is improving the existing perception of the Board and the Society in general.

c. Membership Dues: the $60 may be too high for those living overseas, and students. A lower membership fee for those inside Afghanistan and students needs consideration and evaluation.

2) Path Forward:

a. Society of Afghan Engineers (SAE) should focus on becoming a champion and proponent of "Engineering Excellence". This is to provide/recommend, engineering, solutions, and use of available technologies to issues and problems that Afghan general public are being confronted with. Provide guidance on how to improve well beings, and safety of Afghan publics using scientific, existing engineering solutions and available applicable technology. Few examples:

i. How to improve living conditions of those living in woeful tent covering - provide clean water, sanitation, and clean energy for heating--solar system attached to each tent, or network several tents to a single solar/wind energy source. This could provide essential energy for heating, cooking …etc.

ii. How to improve existing living conditions in villages, reduce lingering pollution, in Kabul and other large cities, so people can breathe clean air.

iii. Increase and advance engineering knowledge by providing educational materials for public and engineering libraries. A tiny step with continuity will result long lasting impact. Set achievable goals no matter how small that may be with incremental increase and projected continuity for a period of 5-10 years.

1. Example :

a. Target providing total of five (5) personal computers (PC) in a year to five engineering libraries with incremental increase each year.

b. 20 engineering related text books to five engineering libraries each year

c. Five commercially available simple engineering software tools to five libraries.

iv. I recommend establishing X % of SAE total yearly income for improving engineering awareness and promoting engineering education in Afghanistan. Any form of assistance should have continuity to show effectiveness.

3) I recommend that members of the board not to establish/or become partners with personal NGOs in Afghanistan, or transfer slice of engineering work out of Afghanistan to their own, friends and relative entities overseas. SAE should focus on providing a guiding role, not personal monetary gains. The cadre of local Afghan engineers, Alhamdulillah, is on increase and they should be given opportunity to lead and take ownership of engineering ventures so they can expand their technical skills.

4) Providing support and contact with the engineering institution should take priority over pleasing government officials. Educational institutions stay and bring long lasting impact with time. All contacts on behalf of ASE with local government and private organizations local and overseas should have prior approval from the Board of Directors.

5) I recommend holding once a year an off-site, Society Yearly embers, meeting (fall or spring when airline tickets are reasonable). This will be a good occasion to have technical presentations on subjects of interests

a. Afghan engineers from Afghanistan and oversees should be invited to participate. Those engineers who have provided and applied engineering and technology related solutions to problems, or have improved and advanced the engineering profession in Afghanistan should be recognized during this meeting.

I close with a Dua for a peaceful, prosperous Afghanistan, good health and happiness to every one of you and your family. If I have missed any members in the distribution please forward it to them.

With Best Regard

Hafizullah Wardak 12/25/2014

Responses to Mr. Wardak's Comments:

An email response was sent to him by former SAE President, Ghulam Mujtaba. The following is the content of his response:

Dear Ustad Wardak: Salam

Thanks a lot for the email and valuable suggestions regarding improvement of the Society.
You have mentioned about membership fee. The current bylaws exempt members within Afghanistan for paying membership fee. Also, for all other members it is on voluntarily basis. I agree that consideration should be given to the modification of membership fee requirements and once a year face- to- face meeting. The active participation of all members is necessary to reach the Society goals. I recommend that Board of Directors discuss your suggestions during their upcoming meetings.

I thank you for kind words about SAE 2014 general assembly and time that you have taken from your busy schedule to write about future developmental activities of the Society.

Best regards,

Ghulam Mujtaba

Comments from Mr. J. Almas:

Mr. J. Almas had emailed the following suggestions for discussion and consideration during the general assembly or at later time:

Brief few points

1. *Future Capacity building: Certainly SAE needs a transition plan from the current membership most of us seniors and leading to retirements to the vibrant young Afghan American Diaspora. It is essential by designing marketing and development initiatives to reach out to the Afghan communities in the United States, Canada and even Dubai. We must liaison with the Afghan Communities in Los Angeles; San Francisco; Denver, Colorado; Virginia; New York City; Toronto and Montreal.*

2. *Most of the very talented students do not study the STEM program and registered in the Social Science curriculum. The reason for that is that there is no one to help them. SAE MUST create a FACEBOOK and outline*

an initiatives how to advise Afghan American students in the preparation of college Applications, preparing FAFSA and identifying scholarship for them.

3. *Send delegation to Kabul and share SAE collective human resources, expertise and experiences with the new government. This is the time SAE must lead not follow.*

4. *Create a strong Development and Fundraising structure within SAE to identify funding sources for SAE activities. Establish liaison with universities in the United States and Canada and create joint seminars and conferences about the infrastructures of Afghanistan economic development.*

5. *Establish coherent relationship with the USAID, World Bank and the Canadian Agency for International Developments. All they need to be educated and identify reasons why it is in their economic and national interest.*

6. *Advocate (lobbying) how to influence the United States Congress to support extended financial support for Afghanistan infrastructure.*

ALMAS 12/20/2014

Ghulam Mujtaba, former President has sent the following response to Mr. Almas's email:

Thanks to Professor Almas for valuable comments and suggestions. Your comments will be included in the SAE general assembly minutes and SAE eNewsletter. The Executive Committee and Board of Directors will review your suggestions.

The 2014 SAE Annual General Assembly Teleconference

The SAE membership general assembly was held by teleconference on December 20, 2014. The meeting started at 1:00 PM EST and adjourned at 3:36 PM EST. Thirty five members from Canada and different states of the United States attended the meeting. The minutes of the proceedings were sent by email to members on December 30, 2014.

The meeting included speeches, reports, and discussions. The purpose the meeting was to report the annual activities of the Society of Afghan Engineers (SAE) to its members and other interested participants. Also, the keynote speaker, Dr. A.Saboor Rahim, was invited to present an educational topic about Badakhshan landslide.

The following are highlights of his speech:

ENGINEERING & GEOLOGIC ASPECTS OF LANDSLIDES IN BADAKHSHAN AREA AND ITS VICINITY

By

A. Saboor Rahim, Ph. D.
Clovis, California
December 20, 2014

GEOLOGY AND GEOMORPHOLOGY OF BADAKHSHAN

- Explaining causes of landslides requires understanding of the geology, geomorphology, and geotectonic of the area.
- During the last Ice Age (2.6 million years ago) the glaciers in "High Asia" aka Hindu-Kush-Himalaya Region covered most of the area including Badakhshan.
- Badakhshan belongs to the Upper Amu Darya (Panj) river system that is fed by glaciers in Pamir.
- When the climate warmed up (Pleistocene age, 2,588,000 to 11,700 years ago), the glaciers melted. The exposed material, called glacier till, covered large areas.
- The glacier till consists of rock, gravel, sand, silt and clay.
- Numerous formerly glaciated deep valleys > 1000 m deep exists thorough the region, typically with steep faces close to angle of repose.
- The melting glaciers generated tremendous flow of water, running down the valley.
- The flowing water carried along with it fine sand, silt and clay particles which covered large areas of the valleys.
- As the temperature increased these deposits dried out, strong winds moved the exposed sediments and swept the finer materials to the foreland, i.e., bold steep banks.
- Where silt accumulated, high hills were formed. These deposits are called loess.
- Often several loess deposits are stacked on top of each other, because each individual glacier produced new loess deposits.
- Loess thicknesses are on the order of 50-100 m, maximum thickness of 325 m has been observed at Jiuzhoutain Mountain in north-central Lanzhou, China.
- Loess deposits in Badakhshan, Balkh, Samangan, Kundoz and Baghlan were created by silt particles blown from the Kara Kum desert of Turkmenistan and the alluvial plains of Amu Darya basin.
- The small particles settled out of air-born suspension, deposited slowly, forming a lose, "card house" or "haystack" soil structure, cemented by clay bond or calcium carbonates.
- Loess mainly consists of quartz, feldspar and mica grains that are angular showing little polishing or rounding.

- Because the grains are angular, loess often retains the shape of banks for many years without slumping.
- Loess is considered to be metastable (stable if not subjected to disturbance.
- In a dry condition, loess soils are stable and remain stable even if vertical cuts are made. When subjected to saturation under load, loess experienced immediate settlement, resulting in the development of settlement cracks or even structural failure.
- Due to its porous structure, loess is capable of absorbing significant amount of water.
- When water content is increased up to 35%, the shear resistance decreases by 60%.
- Increase in water content and pore water pressure results in loss of bond between loess particles, resulting in the liquefaction condition for the soil.
- When saturated loess is subjected to cyclic loading, such as earthquake, excess pore water pressure develops. The excess pore water pressure breaks the bond between the loess particles and results in loess liquefaction.

BADAKHSHAN AREA GEOTECHTONIC

- Two fault systems exist within the Badakhshan area.
- The Central Badakhshan Fault located near the central part of Badakhshn and extends in almost north-south direction with an assigned slip rate of 12 mm/year.
- The Darvas Fault located near the Badakhshan-Taloqan border near the City of Rostaq and extends in an almost north-south direction with an assigned rate of 7 mm/year

BADAKHSHAN AREA LANDSLIDES

Predominantly, the Badakhshan area has experienced various types of landslides. The three common types include:

1. Glacial Till Slides
2. Rock Slides
3. Loess Slides

- Most of the Badakhshan area has not been developed; hence most of the landslides take place in uninhabited areas and do not cause significant damage.
- Sometimes a landslide blocks a river and forms a dam.
- Water stored behind the dam, when seeps downstream, attracts people by providing water for irrigation.
- High volume of water accumulated behind the dam could trigger flooding due to natural flow, human activities downstream or earthquake and cause damage to properties result in human casualties.

- Loess is a very fertile soil and attracts people for using the land for irrigation purposes. Failure of loess slopes could cause significant damage to properties and result in significant fatalities.

EXAMPLES OF DAMMED LANDSLIDES

- Lake Shewa (aka Lake Sheghnon) occurred in a high mountain region of plentiful small glaciers and is one of the highest landslide of its kind in the world.
- Numerous formerly glaciated deep valleys, >1000 m deep, exists throughout the region and an assumption has been made by many people that Lake Shewa was dammed by glacial moraine.
- Lake Shewa is located about 10 km west of the north-flowing Ab-e-Panj River that constitutes northeastern boarder with Tajikistan.
- Using remote sensing data and other documents, researchers from the University of Nebraska and Kansas State University identified four rock avalanches in addition to a glacial till slide.
- A large rock avalanche from the strongly weathered Archean Gneisses of the Zirnokh peaks to the north moved into the Arakht River valley.
- The rock avalanche dammed up the river and its tributaries to a dam thickness of 400 m producing a 12-km lake that is as much as 270 m deep, leaving 80 m freeboard, hence total dam height 350 m, crest height of 400 m.
- Spring seepage through the dam has caused several recent subsidiary debris slides, which if continued at large enough scale for long enough, or with additional seismicity from active strike-slip fault that cross beneath the landslide dam could threaten its integrity.
- The lake may have more than 2 km^3 (2 billion m^3) water. There are human occupants on, around, and downstream from it who stand to either benefit from or suffer the effects of the landform and its evolution and/or use.
- There have been very few studies conducted on the Lake Shewa Landslide Dam, no plans have been reported to either prevent or mitigate the dam's ultimate or progressive failure.
- There is an obvious need for some type of long-term monitoring/early warning system such as lake water level monitoring, meteorological stations, stream flow stations, tilt meters, inclinometers, and GPS tracking.
- The existence of a crack, 270 m long, 70 m wide in a mountain, only 2 km above Shewan Lake was reported in 2010. The crack created by a spring in the mountain.
- Water getting in the crack might overflow, triggering a flood from Shewa Lake south. Thousands of families in Afghanistan and Tajikistan could be washed away. The point that this could happen was expected to be reached in 2014.
- Glaciers in Badakhshan occur throughout the higher parts of the mountain range around Lake Shewa, especially on the main Koh-i-Safid Khirs just west of the Main Central

Badakhshan Fault, which runs almost north-south through the north-central part of the province.

- To the east of the fault system, glaciers also occur in the regional Koh-i-Hazar Chashma directly north and south of Lake Shewa along the left bank of Ab-e-Panj.
- About 32 of these glaciers, together with melting winter snows and summer rainstorms, serve as the main source of water inflow to the impounded lake.

EXAMPLES OF LOESS SLOPE FAILURES

1. LANZHOU LOESS REGION

- In 1920 the Haiyuan Earthquake (magnitude 7.8) triggered a very large number of landslides in loess, predominantly in the form of rapidly moving flow slides.
- Estimates of the human cost vary widely, but it is generally accepted that more than 200,000 people lost their lives during these events.
- This was one of the deadliest earthquake events in history, mainly as a consequence of the large number of landslides that were generated by the seismic shocks.
- In north-central Lanzhou, loess reaches its greatest thickness of 325 m. Elsewhere in the region, thicknesses between 50 and 100 m are commonly observed.

2. MOUNTAINS OF SOUTH GANSU AND SICHUN

- The Wenchuan Earthquake of 12 May 2008 affected an area of more than 50,000 km^2 and resulting in about 80,000 fatalities.
- In 2013 Xu et.al constructed and analyzed the largest recorded event database from a single trigger. The database contains some 196007 landslides, collated an intensive comparison of air-photograph and satellite interpretation.
- The potential threat from the debris flow in the region was well understood and a number of check dams were constructed in the mountains catchments as part of a large scheme to reduce the impact of debris flows on the settlement in the valley below.
- The intensity of this event was many times greater than the design profile of these dams.
- This disaster triggered substantial investment in research, disaster relief, and hazard management. It has also resulted in construction of substantial debris-flow control structures.
- The importance of rainfall triggering major geohazards is clearly recognized, particularly in an area where seismic activity provides an additional drive to heighten the susceptibility of landscapes to generate marginally stable slopes.

3. OSO, WSHINGTON LANDSLIDE

- On March 22, 2014 some 15-75 feet of mud buried 49 homes. the landslide was 1 mile long and covered 1 mile^2.
- The movement was recorded by seismograph 138 mile away.
- Several older landslides were identified in the area, the oldest one was identified to be 5,300 years old based on the age of a bark obtained from the surface of the old landslide.
- Thermo cameras were used for detected survivors buried in the mud. Eleven (11) people were rescued in a short period of time.
- Cause of the slide was considered to be continuous rain, resulting in the formation of liquefaction.

4. LANDSLIDE IN AAB-E-BARIK VILLAGE OF ARGO DISTRICT OF BADAKHSHA

- On May 2, 2014, there were two successive mudslides at around 11:00 am (Friday) within an hour flew towards Aab-e-Barik Village of Argo district.
- The casualties are estimated to be 350 people and the landslide buried 87 houses.
- Rescue efforts failed due to lack of adequate and appropriate equipment and thickness of the mud (more than 20 meters in some places).
- The number of affected people was estimated around 1,000 families, 700 of which are displaced.
- Badakhshan has limited farm land. The people tend to build their home along the hillside, leaving valley land for agricultural purposes. This practice results in soil erosion.
- The hills that were used for grazing are used for “lalmi” wheat crop, providing access to water penetrating through the plowed land.
- In the absence of sufficient oil and natural gas fuels, people cut the trees covering hills and hillsides causing soil erosion.
- The landslide blocked the stream passing through the village and created a pool/lake of trapped water, resulting in saturation of the dammed soil.
- On May 14, 2014, about 60,000 m^3 of water were accumulated in the lake. This amount increased to 135,000 m^3 after the heavy rain of May 22, 2014.
- Various breach simulations were carried out by the US Army Corps of Engineers (USACE) considering different discharge rates.
- The solution proposed to overcome this problem was to construct a channel connecting the upstream section to the downstream part.
- As an immediate action, water pumps were used for controlling the rise in water level and avoid the overflow of water from top of the dam.

- A team of national experts with the help of local people started the excavation of the channel after approval of the local government and discussions made with other expert organizations.
- Upon the completion of construction of the channel, it was concluded that there were no more threats to the downstream villages due to the poundage of water in the upstream section which was approved by USACE, the Chinese experts and other relevant agencies.

PREDICTED LANDSLIDE IN SWITZERLAND

- Various monitoring system were employed to predict a landslide in a mountain in Switzerland on May 15, 2012.
- The road leading to the landslide area was closed to traffic on the anticipated day of slide
- About 300,000 m^3 of earth moved without causing loss of human life.

ASSESSING STABILITY OF LOESS SLOPES

- Frequent failure of loess slopes is closely related to progressive weathering along zones in the slopes, which causes dramatic decrease in strength from peak strength condition.
- During the process, shear strength reduction along potential slip surfaces maybe achieved by leaching of readily soluble salts, destruction of cementation bonds and redistribution of particles.
- Localized collapse of the loess fabric causes internal deformation and consequently peak strength conditions are concentrated on a progressively smaller area of the failure plane.
- The mode of failure of loess slopes is generally determined by brittle failure of the undisturbed and un-weathered, central parts of the slope.
- It is important that both the weathered and un-weathered strength of loess materials be established to analyze the stability of existing loess slopes.

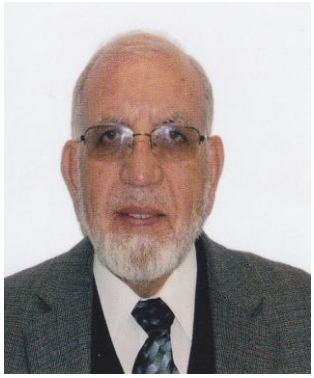
MINIMIZING DAMAGE FROM LANDSLIDES

- Radar beams, time lapsed cameras could monitor landslide movement.
- Laser, mirrors, crack meters, automatic extensometers have been used for detecting landslides.
- Thermo cameras could detect heath and locate survivals.
- Constructing debris control structures within the mountain areas could minimize damage to the area.
- Within the dammed lakes the following systems could help in early detection of landslides:

- Lake level monitors
- Meteorological stations
- Stream flow stations
- Tilt meters, inclinometers
- GPS tracking

REFERENCES

1. Boyd, O.S., Mueller, C. S., and Rukstals, K. S., 2007. Preliminary Earthquake Hazard Map of Afghanistan. USGS Science for a Changing World. Open-File Report 2007-1137.
2. Dijkstra, T. A., Wasowski, M. G., Winter, M. G., & Meng, X. M., 2014. Introduction to Geohazards of Central China. Quarterly Journal of Engineering Geology and Hydrology, the Geologic Society of London.
3. Hassani, A. W., and Rahim, A. S., 1983. Collapsing Properties of Loess Soils. Indian Journal of Power & River Valley Development, January-February.
4. Jehring, S. Engineering Geology Problems in Loess Deposits. TU Bergakademie Freiberg.
5. Lohnes, R.A. and Handy, R. L., 1968. Slope Angles in Friable Loess. The Journal of Geology, Volume 76, No. 3. The University of Chicago Press.
6. Petely, D., 3May 2014, Badakhshan Landslide in Afghanistan- A Loess Failure? The Landslide Blog.
7. Rutting, T., 9 May 2014. Slippery Slopes: Ecological, Social, and Developing Aspects of the Badakhshan Landslide Disaster, Economy & Development.
8. Senseney, C. T., Assistant Professor, U. S. Air Force Academy, Colorado, USA, 24 May 2013. Expedient Mitigation of Collapsible Loess in Northern Afghanistan. International Journal of Geoengineering Case Histories, Vol. 2, Issue 4.
9. Shobair, S. S., Rahmat, M. N., Ghazanfar, S. H., and Shobair, S. M., October 10, 2014. A Report on Landslide Tragedy in Aab-e-Barik, Village of Argo District, Badakhshan Province, Afghanistan, Kabul, Afghanistan.
10. Shroder, J. F., Jr., Department of Geography and Geology, University of Nebraska at Omaha, Omaha, Nebraska, USA and Weihs, B. J., Department of Geography, Kansas State University, Manhattan, USA, 2010. Geomorphology of the Lake Shewa Landslide Dam, Badakhshan, Afghanistan, Using Remote Sensing Data, Geogrfika Annaler: Series A, Swedish Society for Anthropology and Geography.
11. Xu, C., Xu, X. W., Yao, Q. & Wang, Y. Y., 2013. GIS-based Bivariate Statistical Modeling for Earthquake-Triggered Landslides Susceptibility Mapping Related to the 2008 Wenchuan Earthquake, China. Quarterly Journal of Engineering Geology and Hydrology, 46.



Author's biography

REGISTRATIONS: Registered Geotechnical Engineer California
Registered Civil Engineer California
Environmental Assessor California

AFFILIATIONS: American Society of Civil Engineers Society of Afghan Engineers

EDUCATION: Ph.D., 1976, Civil Engineering, University of Pittsburgh, Pittsburgh, PA
Post Graduate Diploma, 1970, Geotechnical Engineering, Asian Institute of Technology, Bangkok, Thailand
M.S., 1967, Civil Engineering, Purdue University, W. Lafayette, Indiana
B.S., 1964, Civil Engineering, Kabul University, Kabul, Afghanistan

Dr. Rahim has over 35 years experience in Geotechnical Engineering, Environmental Engineering, Construction Observation and Material Testing. He has established ASR Engineering, Inc. in 1994 in Fresno, California and currently serving as the firm's Managing Principal and Senior Engineer.

Between the years 1967-1970, 1971-1972 and 1977-1980, Dr. Rahim taught various courses at the Faculty of Engineering, Kabul University and twice served as Chairman of the Civil Engineering Department. During the years 1977-1980 he also served as the Director of the Center for Engineering Consulting Services and Applied Research (CECSAR).

During the period 1970-1971, Dr. Rahim conducted a pile testing research project in Bangkok, Thailand.

From 1980 to 1986, Dr. Rahim served as the Director of Engineering for GDC Engineering, Inc., in Denver, Colorado and Baton Rouge, Louisiana.

From 1986 to 1987, Dr. Rahim was the Supervisory Engineer for Cooper Engineers, Inc. in Mountain View, California.

From 1987 to 1994 Dr. Rahim was Engineering Manager at BSK & Associates in Fresno, California.

In the summer of 1991, Dr. Rahim conducted a graduate level refresher course in design of highways and bridges for the Afghan refugee engineers in Peshawar, Pakistan through the joint efforts of the University of Nebraska and the International Rescue Committee (IRC).

The SAE Financial Report

The following SAE 2014 annual financial report was presented by Mr. Atiq Panjshiri, former Vice President.

The Account Balance as of 12/31/2013 = $13,212.23

Income in 2014

Membership Renewal fee for 2014 = $ 873.58

Badakhshan Landslide Donations = $18,716.76
Total Income in 2014 = $ **32,802.57**

Expenses

Wire Transfer to SAAE Bank Account = $18,652.00
Wire Transfer Fee = $72.00
Website Fee = $70.00
VA State Registration = $25.00
Returned Check = $50.00
Printing Checks = $48.96
Total Expenses = $**18,917.96**
Balance as of December 20, 2014 = $**13,884.61**

The SAE 2014 Election Committee Report

By: Mr. Sayed A. Zahori

Dear Colleagues:

The voting process of the Society of Afghan Engineers 2014 Election started on October 1, 2014 and continued until October 31, 2014. The following SAE members were the candidates for the vacant positions:

No	Position	Candidates
1	President	Atiq Panjshiri
2	Board of Director	Amanullah Mommandi
3	Board of Director	Najim Azadzoi
4	Board of Director	Saber Sarwary
5	Board of Director	Saleh Keshawarz
6	Board of Director	Sohaila Shekib
7	Board of Director	Nazeer Babacarkhial
8	Board of Director	Rafaat Ludin
9	Board of Director	Wahid Enayet
10	Board of Director	Hafizullah Wardak

The biographies of the candidates were included in the October 2014 issue of the SAE eNewsletter.

There was only one candidate for each vacant position. All candidates were approved through the voting ballot process by the SAE members for the positions that they were nominated. Accordingly, the newly elected President and Board of Directors will serve their term from January 1, 2015 to December 31, 2017.

On behalf of the Election Committee I congratulate the elected President and Board of Directors and wish them continued success in reaching their goals of serving Afghanistan!

Thanks to all of you who took the time to participate in the election process. We appreciate the work of all professional members, especially the leaders of SAE with their enduring commitment to achieve great progress and success toward the goals and objectives of this Society.

Thanks to the Election Committee members; Mrs. Aziza Tarin, Mr. Hamayon Ibrahim, Mr. Najib Kazimi, and Dr.Nadir Sidiqi for their efforts and cooperation during the election process.

Best Regards,

Sayed Amir Zahori
Chairman, Election Committee
The Society of Afghan Engineers
Email: szahori@gmail.com

Tel : (510) 431 3596
Cell: (650) 504 0735

Training activities during SAE members' travel to Afghanistan

The Society members have been urged to participate in the training and other professional work activities while traveling to Afghanistan. During the year 20124 a few members were able to extend their personal or official travel times to visit the educational or other technical institutes and they have offered their assistance while they were in Afghanistan. Accordingly, Dr. Nadir Sidiqi, Dr. M. Saleh Keshawarz, and Dr. Yar M. Ebadi offered the trainings and have held meetings as described below:

Dr. M. Nadir Sidiqi's report:

Dr. Sidiqi has written a book entitled "Biodiversity Conservation: A Path to a Healthy Afghanistan". His book may be may be ordered from: Amazan.com: **www.Amazon.com** or Organic Ecocare: www.organicecocare.com . A brief description of his book is included in "A Glance at Books and Publications" part of the January 2014 issue of the SAE eNewsletter.

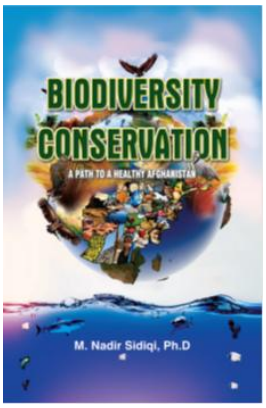
The following report has been submitted by Dr. Sidiqi, CEO/President of Organic Ecocare Inc. and SAE member regarding his travel and training in Afghanistan:

A brief report on my trip to Afghanistan

By: Dr. M. Nadir Sidiqi

I had the opportunity to visit my native country Afghanistan during the month of September 2014. My last visit was in December 2005 as a speaker at SAE/SAAE Conference in Kabul. The trip began from Los Angeles with the two boxes of 66 copies of my humble gift, the book titled "**Biodiversity Conservation: A Path to a Healthy Afghanistan**". The books were distributed among various University Libraries and respected colleagues.

The following photos represent various events that I attended during my visit:



1. Meeting with respected Mr. Saleem Khan Kundozi Deputy Minister for Finance and Administration at the Ministry of Agriculture, Irrigation and Livestock.

2. Meeting with respected Dr. Wakil Ahmad Sarhadi, Dean of the Faculty of Agriculture at Kabul University. He was presented with a copy of the book

3. Presentation at the Faculty of Science, Kabul University.

During this trip I also visited respected Dr. Zabi Mojaddidy, President of Society of Afghan Architects and Engineers (SAAE) and had interviews with Ariana, RTA and Shamshad TVs. I hope to be able to further assist in the enhancement of sustainable agriculture education in the beautiful Afghanistan. I will also be presenting my book at the 13th International Conference on Sustainable Urban Environment, in Paris in January of 2015.

Dr. Y. M. Ebadi's report:

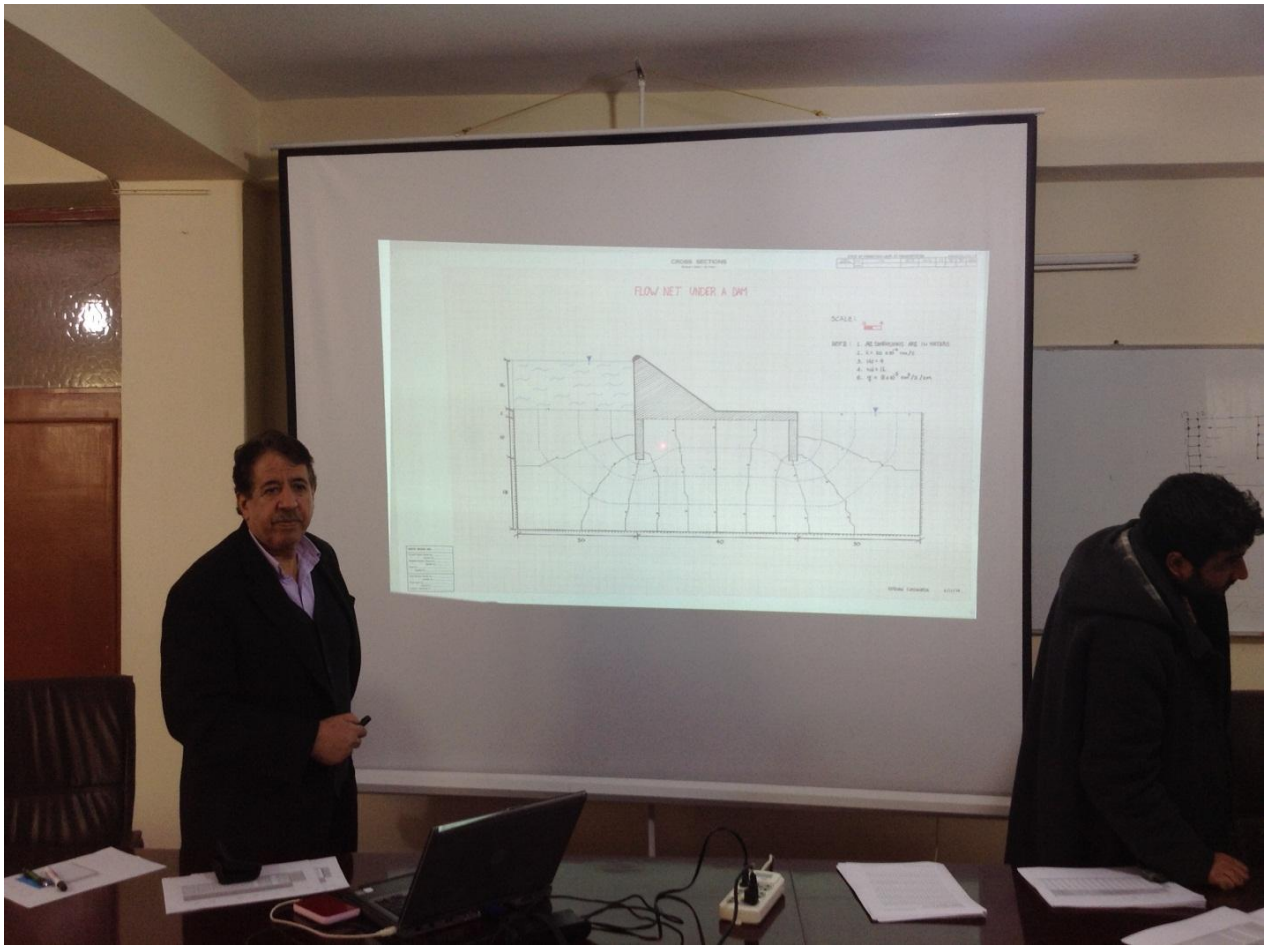
Dr. Yar M. Ebadi, former member of SAE Board of Directors; Professor and Dean Emeritus of Business Administration Kansas State University offered several training sessions at the National Institute of Management and Administration (NIMA) of the Ministry of Education. His training sessions were on Management and Leadership, as well as Faculty Development and Accreditation. In addition, he held several meetings with officials of the Ministries of Education and Higher Education, focusing on enhancing the quality of education in the academic institutions.

Dr. M. Saleh Keshawarz's report

Applications of Geotechnical Engineering Principles in Water Resources Engineering

Dr. Keshawarz, PE, member of the Board of Director of SAE and Chair and Professor of Civil Engineering Department at the University of Hartford, delivered a two week course on the applications of Geotechnical Engineering Principles in Water Resources. Participants of the course included the technical personnel of the Harirud-Murghab River Basin and students from Faculty of Engineering, Herat University.

Topics included review of principles of soil mechanics, fundamental of flow net construction, solution of Laplace's Equation using finite difference method, flow net construction using MS Excel to calculate head, seepage calculations, design of filters for erosion control, sheet pile analysis and design, and into slope stability. This was an introductory course and more advance topics such as Roller Compacted Concrete Structures will be included in some future course.



Dr. Keshawarz, PE Presenting the applications of flow net in seepage calculation and uplift pressure

Dr.Keshawarz, PE Supervising participants using MS Excel in flow net construction

SEDIMENT MANAGEMENT IN RESERVOIRS OF AFGHANISTAN

The Editorial Board of the SAE eNewsletter asked Professor Nouri to express his professional opinion about sediment management in reservoirs of Afghanistan. He has sent the following article and link to a video related to Hoover Dam.

Sédiment Management in Réservoirs of Afghanistan

Hasan Nouri, Hoover Medalist, President, FluvialTech Inc.
Chairperson of Technical Affairs Committee, The Society of Afghan Engineers

INTRODUCTION

In August of 2011, I was invited by Dr. Azad Mohammadi, Program Lead USAID/IRD to deliver the PowerPoint presentation on the subject of Sediment Management in Reservoirs of Afghanistan in the Ministry of Energy and Water in Kabul for the Capacity Building Program. Then in 2012 I delivered the same presentation in the Erosion and Scour Conference in Paris, France.

DESCRIPTION

Erosion and deposition processes and sediment transportation along streams and rivers are rules not exceptions. For thousands and millions of years mountains have washed into the seas. Prior to the industrial revolution societies around the world constructed small dams made of cobles, sand and clay. These small dams diverted the runoff from rivers into floodplains where crops, vegetables and fruits were produced. During minor and major storm events these dams would wash off and therefore allowed the transportation and delivery of the sediment to the downstream reaches.

Since the industrial revolution during the past century due to population increase and demand for water man has constructed major dams all over this earth. These dams are designed to store runoff from all major and minor storm events. Unlike the ones constructed prior to the industrial revolution these major dams are designed not to fail. As a result these large dams trap sediment and do not allow the transportation of sediment to the downstream reaches. The majorities of the reservoirs created by these dams around the world are filling up with sediment and are losing water storage. This imbalance due to increase in demand for water and loss of storage in reservoirs as well as global warming are potential for major conflicts around the world. The Former United Nations Secretary General Boutros Boutros-Ghali 20 years ago mentioned that « wars of the world are going to be over water and not land. For thousands of years man has fought over land and territory. The battles of the future are going to be over water ». Mark Twain had said « Whisky is for drinking, water is for fighting ».

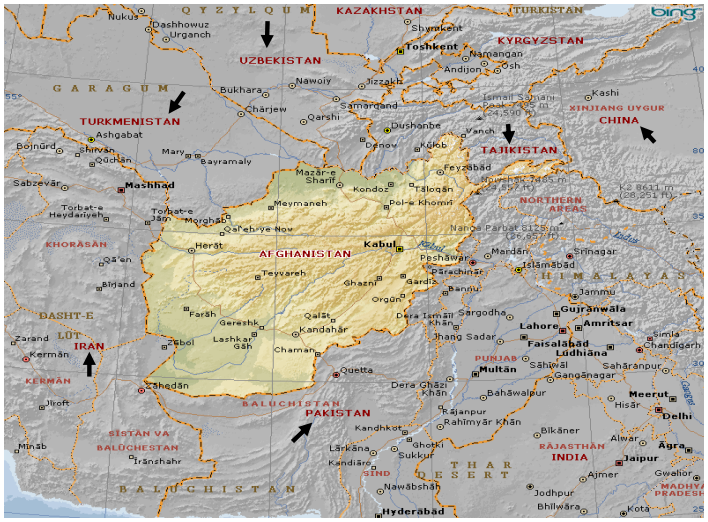
This fact is of enormous importance for Afghanistan. During winter season snowfall in the Hindukush Mountains of Afghanistan becomes a source of water for the spring and summer seasons (See Figure 1).

Figure 1 – Character of Hindukush Mountains

By looking in Figure 2 one would ask the following questions:

- If Afghanistan constructs many reservoirs along the Kabul and Kunar Rivers what are the benefits and losses to Pakistan?
- What are the responsibilities of Pakistan to manage sediment in the existing and planned reservoirs of Afghanistan along the Kabul and Kunar Rivers?

Figure 2 – Map of Afghanistan



The same questions can be raised with respect to Amu River and Tajikistan and Uzbekistan. Similarly, these questions can be raised with respect to Helmand River and Iran. It is important that these issues and questions be resolved in managing sediment in reservoirs of Afghanistan as well as planning, designing and constructing new dams in Afghanistan.

In 2010 the American Society of Civil Engineers (ASCE) invited me to participate in the National Geographic Channel (NGC) program entitled "Hoover Dam Reinvented". Hoover dam was designed and constructed in 1930s. The question of that program was: "Given today's science and technology how would we redesign the Hoover Dam?" It includes information about sediment management. In the following video of NGC the answers are given. It is a 45 minute video and the first 5-minute of the video is important to watch. Then my comments begin at about 38-minute time.

https://www.youtube.com/watch?v=Kk1pMH7nk6A

Membership News

In this section, the news about new membership, awards, promotions, retirement and loss of the Society members will be provided.

Achievements and Awards

The newsletter will inform their readers of winners of awards or any other successes of Afghan professionals and students, especially, their Society members. You can help the SAE eNewsletter editors by providing the news of the achievements, award winners, promotions, and any other success stories.

"Advise us of success stories or achievements of the Society members and any Afghan professionals and students."

Congratulations to Professor Hasan Nouri, P.E. for his new appointment

Professor Hasan Nouri, P.E., Hoover Medalist, President, FluvialTech Inc. will be teaching hydraulics at California Polytechnic University in Pomona. He will be beginning his teaching job in the winter quarter on January 5, 2015.

The editorial board members of the SAE eNewsletter are wishing Mr. Nouri continued success.

Membership Renewal 2015

The attached form includes application for the new members and membership renewal. The application forms may be viewed at SAE website. The members are requested to take a few minutes of their time to inform the Society by sending their updated contact information.

The completed application/renewal forms may be mailed to

Mr. Atiq Pnajshiri,
SAE President
P.O. BOX 11097
Alexandria, Virginia 22312

Thanks to members who have updated their membership renewal and have paid their annual membership fee in 2014. Also, the treasurer has received donations checks from a few members. Thanks for their generosity.

THE SOCIETY OF AFGHAN ENGINEERS

P.O. BOX 11097

Alexandria, Virginia 22312

Telephone: 703-407-2600

MEMBERSHIP APPLICATION/UPDATES

Name: _____

Address: _____

Phone: Home: _____ Office: _____

Email: _____

The active members of the Society of Afghan Engineers (SAE): Please mark (x) the appropriate box related to your address and other contact information.

------- Yes, the above is a change of address or contact information.

-------- No, the above address is the same as it is recorded on the SAE's Current Membership List

Please mark (x) the appropriate box if you are submitting this application to join as a new member of SAE:

____ A regular member: I have at least four years of architectural or engineering education. A copy of my education certificate is attached.

____ Associate member: I have at least four years of education in the technical or professional fields other than architectural of engineering. A copy of my education certificate is attached.

Amount of Annual 2015 Membership fee: $60.00

Donation: : ----------

Total: : ----------

Please send your check or money order payable to the Society of Afghan Engineers.

Suggestion and comments:_____

Signature:_____ Date: _____