



MEMARYAT  
Effat University

# SECOND MEMARYAT INTERNATIONAL CONFERENCE

APRIL 2018

## CIVILIZATION RESILIENCE CHANGE - CHALLENGE - CHANGE



**Ahmed Y. G. Rashed, Ph.D.**

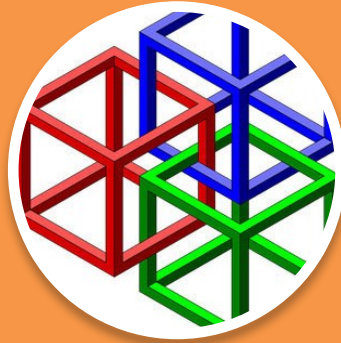
**Professor of Architectural Engineering and Founding Director of Farouk ElBaz  
Centre for Sustainability and Future Studies (FECSSFS) | The British University in  
Egypt**



## OUTLINE OF TODAY'S TALK



**Concepts**



**Framework**



**Case Studies**



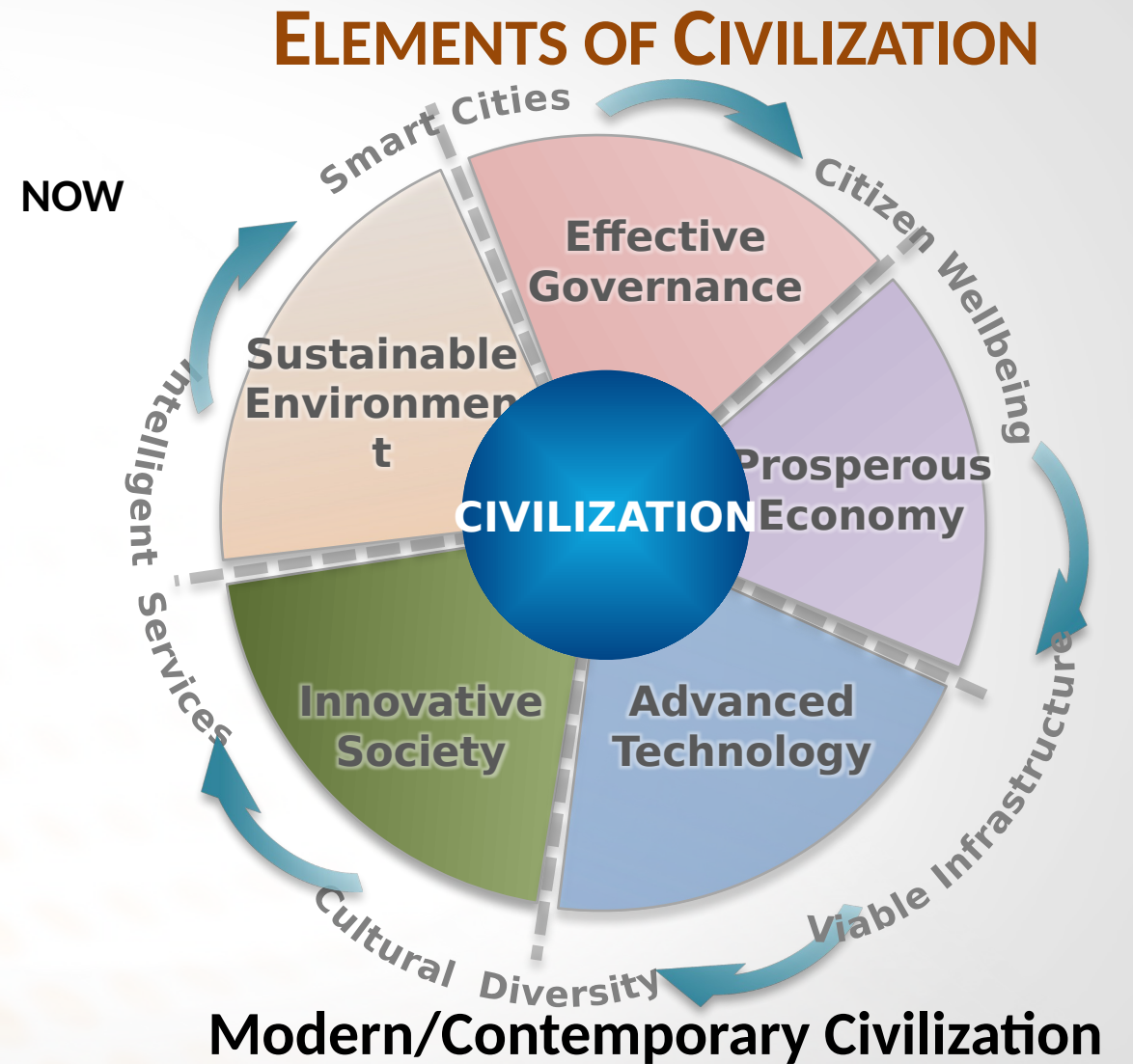
**Concluding  
Thoughts**





## WHAT IS CIVILIZATION?

- **Origin:** the Latin root **civ-**. Seen in such Latin words as **civis** (citizen) and **civitas** (city).
- **Dictionary Definitions:**
  - An advanced state of human society, in which a high level of culture, science, industry, and government has been reached.
  - Modern comforts and conveniences, as made possible by science and technology.
- **In Arabic Language:**
  - **ḥaḍāra** "حضارة" (derived from "Hadhari"): refers to both "civilization" and "settled life".
  - **madanya** "مدنية" (derived from "tmadon"): refers to action work of civilization (To build, To civilize, To humanize).
  - **umrān** "عمران" (derived from "l'amaar"): Pioneered by Ibn Khadloun in the 14<sup>th</sup> Century to refer to the process urbanization, and the advance of human societies



# WHAT IS RESILIENCE?

- **Dictionary Definitions:**
  - The ability of a substance or object to spring back into shape
  - The capacity to recover quickly from difficulties
- **Resilient Ecosystem:** An ecosystem that is capable to respond to a perturbation or disturbance by resisting damage and recovering quickly
- **Resilient Person:** A person who is capable to handle stressful events and remain mentally strong and healthy
- **Resilient Buildings:** Buildings (and infrastructure) that have the ability to absorb or avoid damage without suffering complete failure.
- **Resilient Cities:** The capacity of individuals, communities, institutions, businesses, and systems within a city to absorb, recover and prepare for future shocks (economic, environmental, social & institutional).

# RESILIENCE TO WHAT?

## CHRONIC STRESSES

- slow moving disasters that weaken the fabric of a society. Examples:
  - high unemployment
  - inefficient infrastructure
  - lack of adequate technology
  - corruption
  - endemic violence
  - chronic food and water shortages
  - poverty
  - illiteracy
  - Etc.

## ACUTE/SUDDEN SHOCKS

- sudden, sharp events that threaten a society. Examples:
  - earthquakes
  - floods
  - disease outbreaks
  - terrorist attacks
  - Etc.

## RESILIENCE IN HOLEY QURAN

• قَالَ تَزْرَعُونَ سَبْعَ سِنِينَ دَأَّا فَمَا  
حَصَدْتُمْ فَذَرُوهُ فِي سُنْبِلِهِ إِلَّا قَلِيلًا مِّمَّا  
تَأْكُلُونَ (47) ثُمَّ يَأْتِي مِنْ بَعْدِ ذَلِكَ سَبْعُ  
شِدَادٍ يَأْكُلْنَ مَا قَدَّهْتُمْ لَهُنَّ إِلَّا قَلِيلًا مِّمَّا  
تُحْصِنُونَ (48) ثُمَّ يَأْتِي مِنْ بَعْدِ ذَلِكَ  
سَنَامٌ فِيهِ يُغَاثُ النَّاسُ وَفِيهِ يَعْصِرُونَ  
(49) (سورة يوسف)

- [Joseph] said, "You will plant for seven years consecutively; and what you harvest leave in its spikes, except a little from which you will eat. Then will come after that seven difficult [years] which will consume what you saved for them, except a little from which you will store. Then will come after that a year in which the people will be given rain and in which they will press [olives and grapes]." [12: 47 – 49]



Picture of the remains of the storages built during Prophet Yousef (Source – Al-Haram Newspaper)

# WHY IS RESILIENCE A BIG BUZZ WORD THESE DAYS?



Short

# ELEMENTS OF RESILIENCE

- **Economy**

- number of industries
- presence or absence of economy to generate growth
- conditions allow innovation to take place
- People's access to employment, education, services, skills training

- **Governance/Institutional**

- Leadership and management
- Strategic approaches taken by leaders
- Public sector competencies
- Government openness and transparency

- **Society**

- Society is (or is NOT) inclusive and cohesive
- Status of citizens' networks in communities
- Neighborhood safety
- Well being of citizens

- **Environment**

- Ecosystem is (or is NOT) sound and diverse
- Does infrastructure meet basic needs?
- Adequacy of natural resources

## ACCORDINGLY, CIVILIZATION RESILIENCE IS...

- ....the capacity of a civilization to avoid failure or slowdown because of acute and chronic shocks (economic, environmental, social & institutional)
- .....the ability to build and increase the capacity of a civilization for learning, adaptation, and growth.



Civilization as a complex system of interrelated sub-components covering all broader areas or elements of modern civilization

## THINK “CIVILIZATION” RESILIENCE

- A new concept that encompasses the current perspectives of urban resilience and resilient cities but extends them beyond the “typical” focus on physical and social elements *per se* to include other broader elements including historical, political, heritage, cultural, artistic and even linguistic dimensions.
- Connects lessons learned from the past to today’s wisdom in order to mitigate against and prepare for future shocks.
- Maintains an insightful look at the bigger picture to increase resilience, preserve the rights, promote equity, encourage dialogue and cooperation, and lessen tension and misunderstanding among different civilizations.
- Builds upon the concepts and ideas from “System Theory and Dynamics” to shed new perspective on the rise and failure of civilizations in face of internal and external stressors.

CONCEPTS

Framework

Case Studies

Concluding  
Thoughts

# CIVILIZATION RESILIENCE FRAMEWORK

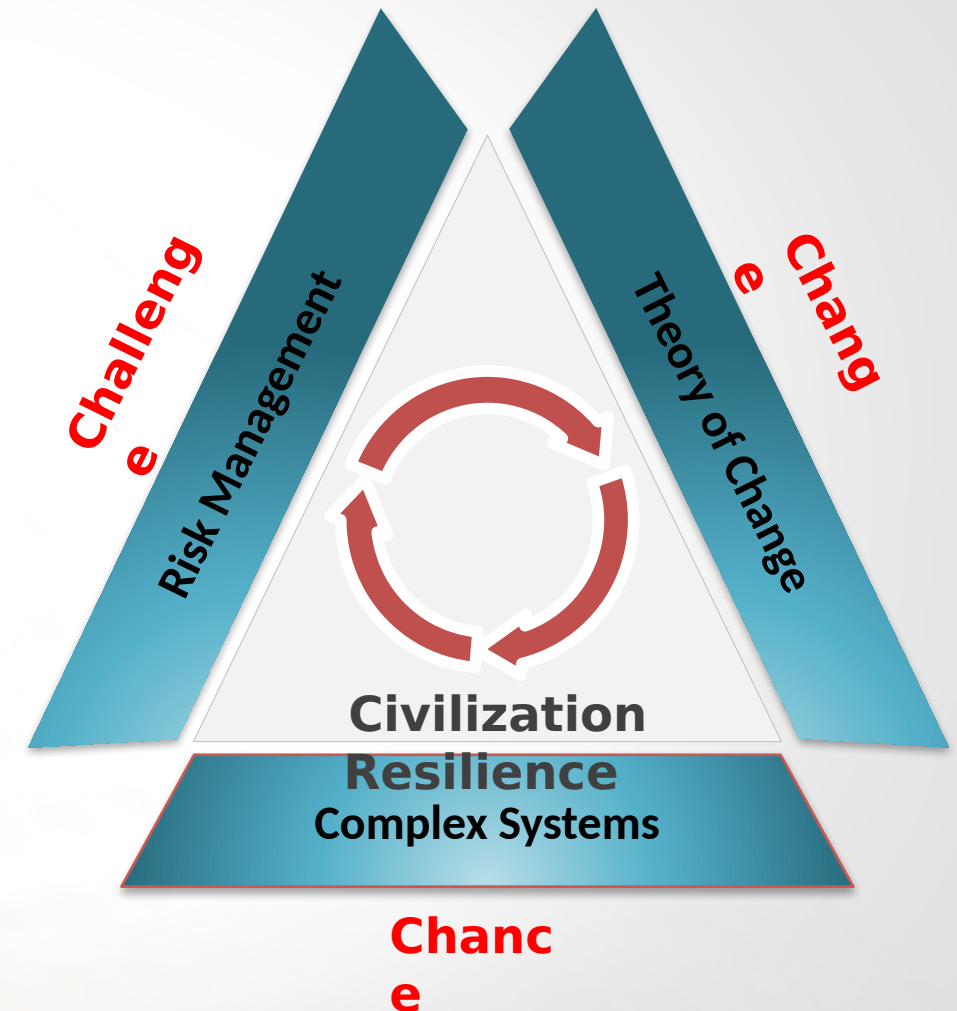


## EMERGING TRENDS IN RESILIENCE STUDIES

- Resilience is viewed firstly as a framework for thinking, and secondly as an increasingly relevant issue in international development, scientific research, and many domains and fields, including urban studies.
- Adoption of a “Systems View” to understand how resilience based planning, development and management can protect life, assets and maintain continuity of functions through any shock or stress.
- Recognition that an integrated, multi-level, and multi-stakeholder approach is needed to build resilience to a range of shocks and stresses at different levels and scales in complex systems.
- There is an emerging trend to produce quantitative tools, indicators and international standards to measure resilience.

# CIVILIZATION RESILIENCE'S 3Cs FRAMEWORK

- **Complex System Theory:** provides a practical approach to deepen our understanding of civilizations and their trajectories, and strengthen our capacity to spot **chances** and endure impactful changes.
- **Risk Management:** provides a proactive way to reveal and analyze various threats and stressors that **challenge** the resilience of civilizations.
- **Theory of Change:** a process-oriented for planning actions that influence civilization resilience in a positive way, and tracking **changes** to which our interventions may have contributed.



# COMPLEX SYSTEMS THINKING

- Complex systems are composed of a hierarchy of subsystems (e.g., civilization elements) which together form a functioning whole **that is more than** the sum of its part.
- Hierarchical systems evolve from the bottom up. The purpose of the upper layers of the hierarchy is to serve the lower layers.
- The behavior of a system (e.g., rise or fall of a civilization) is determined by the collective state of its subsystems and by how they interrelate.
- Systems behavior is fueled by flow of information and feedback loops among its subsystems. An imbalance in such flow affects the stability of the system leading to either growth or decline.
- Complex systems are intrinsically hazardous, containing a changing mixtures of failures hidden within them. These are individually insufficient to cause failure because of the **system resilience**. However, when they accumulate to exceed a given tolerance, a system failure will happen.



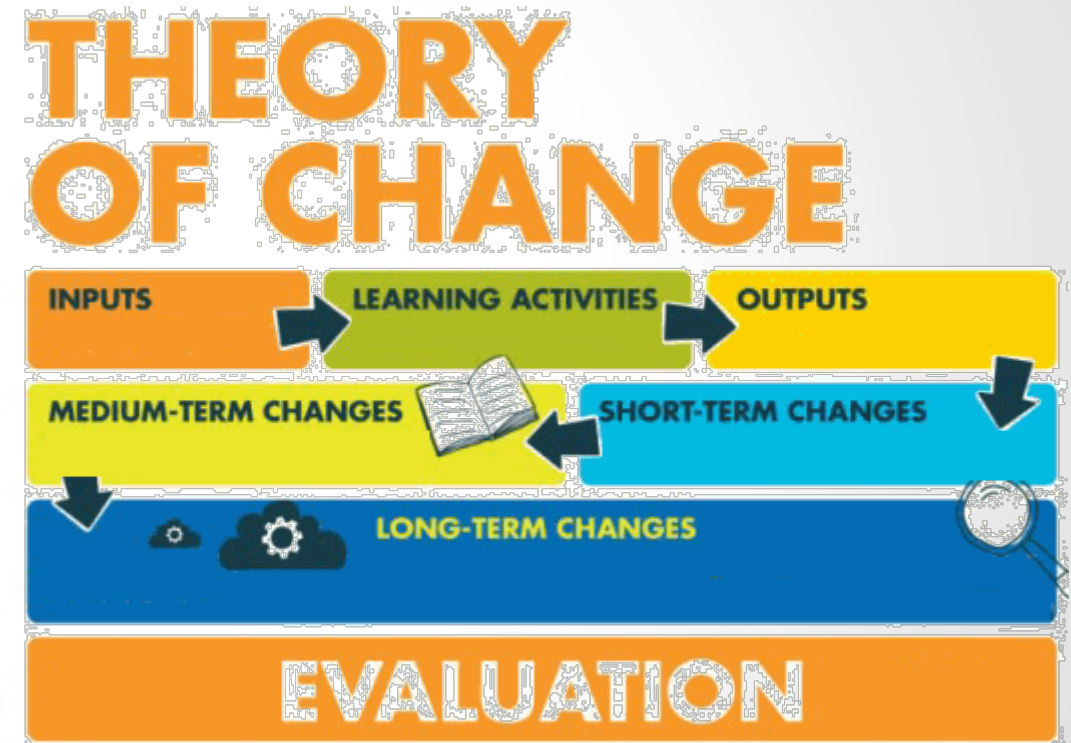
# RISK MANAGEMENT

- A proactive approach to identify chronic and acute threats and challenges, then deal with them
  - Economic
  - Governance/Institutional
  - Societal
  - Environmental
- Enforces resilience by increasing the “immunity” of societies either by eliminating risk threats or reducing vulnerability to them.



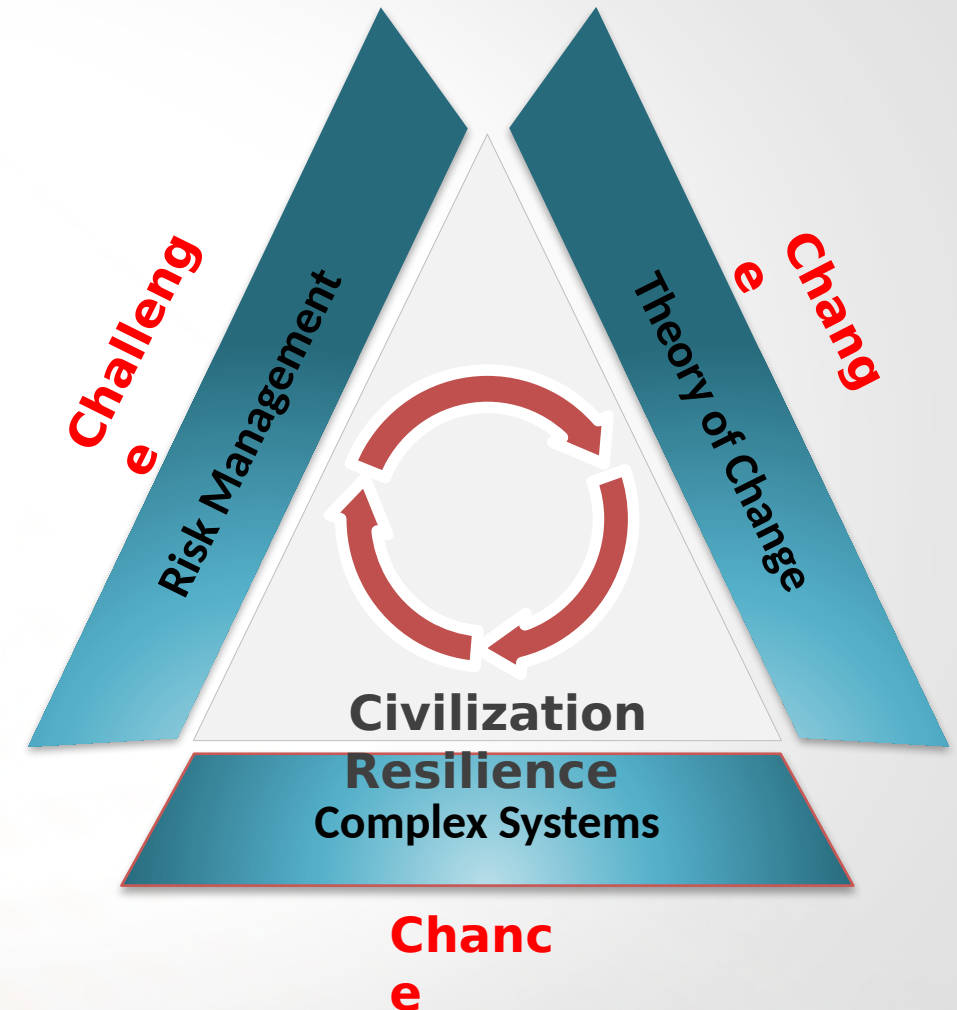
# THEORY OF CHANGE

- Provides a systemic process to design and achieve desired changes through a “causal pathway” that maps the desired changes backwards to the preconditions (activities, context and outcomes) that need to exist to result in the changes
- Helps achieve a shift from *ad hoc* reactions to farther-reaching and longer-term solutions
- Changes at various levels:
  - Individual, Collective
  - Top-down, bottom-up



# DESIRED OUTCOME OF THE 3Cs CIVILIZATION RESILIENCE FRAMEWORK

- To create a resilient civilization that:
  - uses past experience to inform future decisions,
  - possesses alternative resources to support its growth,
  - is able to protect its rights in the past, present, and future through spare capacity purposively created to accommodate disruption,
  - engages all parties and create a sense of shared ownership in decision making,
  - brings together a range of distinct systems and institutions,
  - has well-organized, constructed, and managed sub-systems operating in harmony, and
  - is flexible and cable to adopt alternative strategies in response to changing circumstances.



# CIVILIZATION RESILIENCE CASE STUDIES



## FAROUK ELBAZ CENTRE FOR SUSTAINABILITY AND FUTURE STUDIES

- Established in 2008 at BUE
- Addresses future sustainability in terms of environmental, economic, and social challenges through the engagement of students, youth, academic staff and researchers



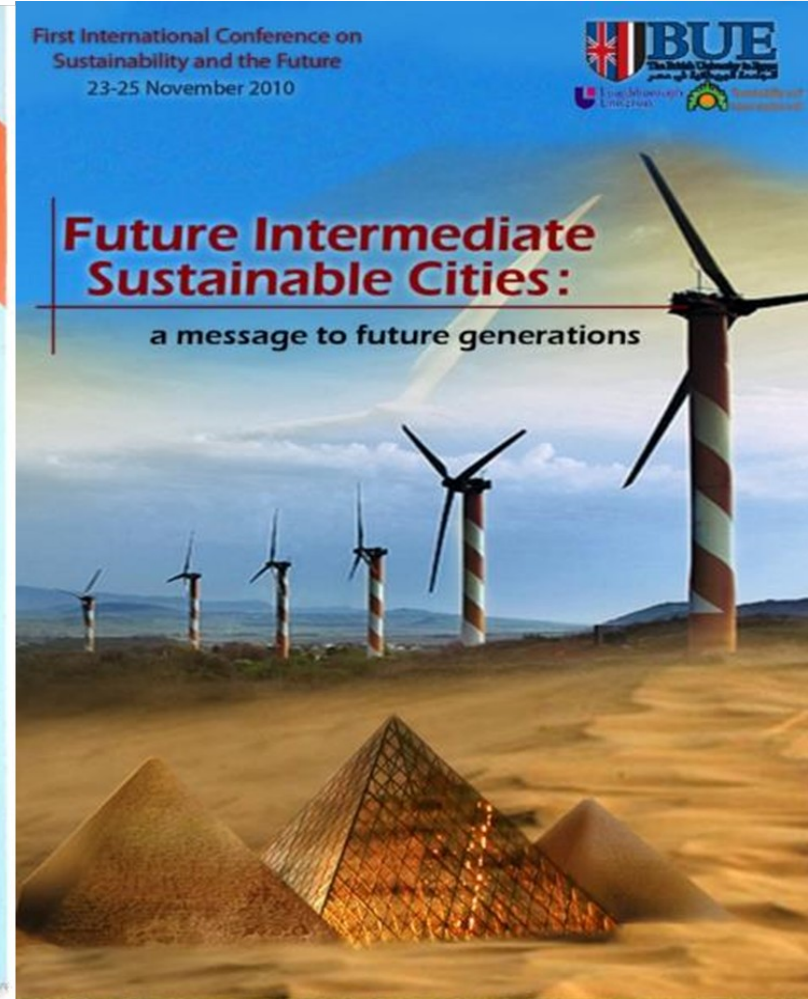
Concepts

Framework

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STUDIES

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Thoughts

# FUTURE INTERMEDIATE SUSTAINABLE CITIES CONFERENCE (2011)



Concepts

Framework

CASE  
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## TAKING LEAVE COMPETITION (2012)

- Resulted in 53 new points endorsing the livelihoods in 95% of Egypt's desert



Concepts

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## LUXOR WORKSHOP: PARTNERSHIP, SUSTAINABILITY AND THE CHANCES (2013)

- Signed MOU with **Luxor Governorate**



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# TAKING LEAVE COMPETITION (2012)

BUE Competition: **678**

## DesrSky

**Economic performance and compatibility**

The idea of forming DESR-SKY societies is based on many steps and procedures. The most important one being its self sufficiency in small scale living units resulting in self sufficiency of large, depending on renewable solar energy and sustainable agriculture, and each unit using recyclable agricultural waste, bio-thermal and biomass for energy.

**Phase 1:** governments and NGOs financing the model and irrigation systems. Further, definition of reclamation sites.

**Phase 2:** Improving the agriculture, watering and the main services depending on income from crops.

**Phase 3:** Improving solar energy usage and locally planting new DESR-SKY units, using excessive energy for export.

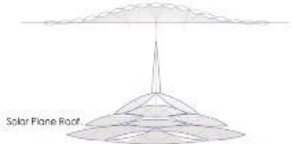
**Phase 4:** forming an industry whether based on agriculture, silicon sand, and sand-lastic materials manufacturing.

**Water Transportation**



**Other applications**

Developing advanced means of transportation such as (Solar Plane - and Solar Ships)



**Solar Plane Roof**



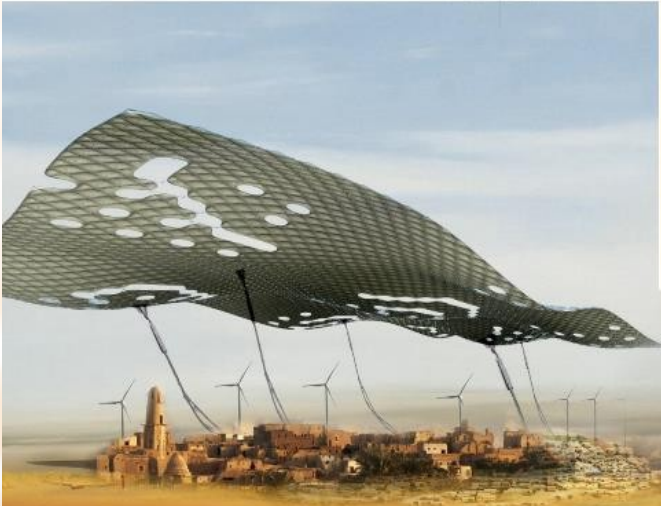
**Contextual and aesthetic impact**

The uniform of Desr-sky shape caused by the specific future urban vision, the irrigated agricultural landscape with social structure provide this proposal with a special esthetic value. The planning is neatly structured to assure the most efficient integrate with the environment. This combined with using simple natural growth and the earth sheltering technique to provide comfort in a thermal & physical sense, directs the project to ecological integration.

### DESERT-SKY

#### FLY on Desert regions

The ability to fly through the desert regions and distillation of sea water, and transit to other remote places is the main target of DESR-SKY. Its light weight and flexibility provides smart integration with desert.



**Integration with Existed communities**

**Planting new natural regions in Desert**

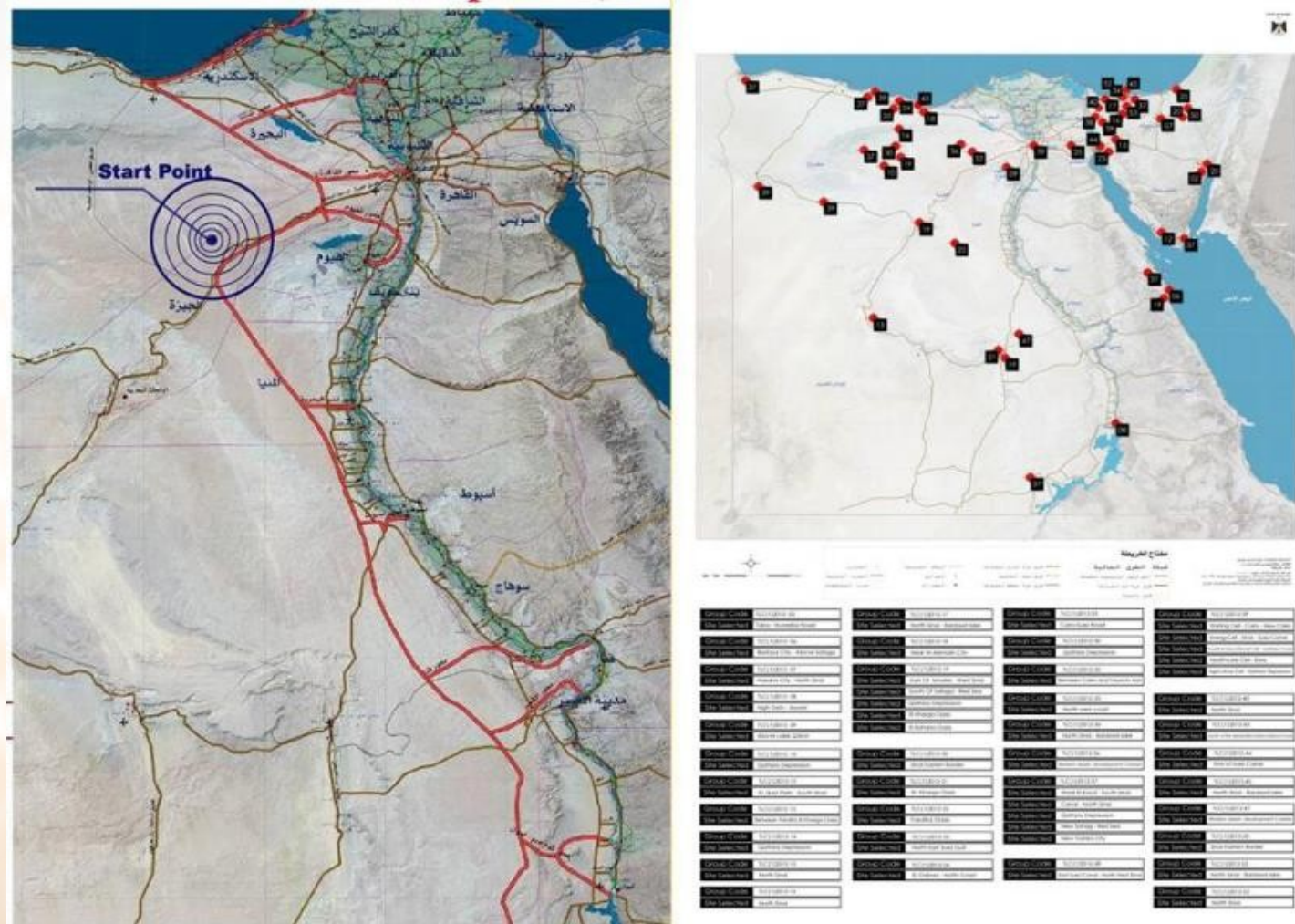
Concepts

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# NATIONAL COMPETITIONS AND GRADUATION PROJECTS



Concepts

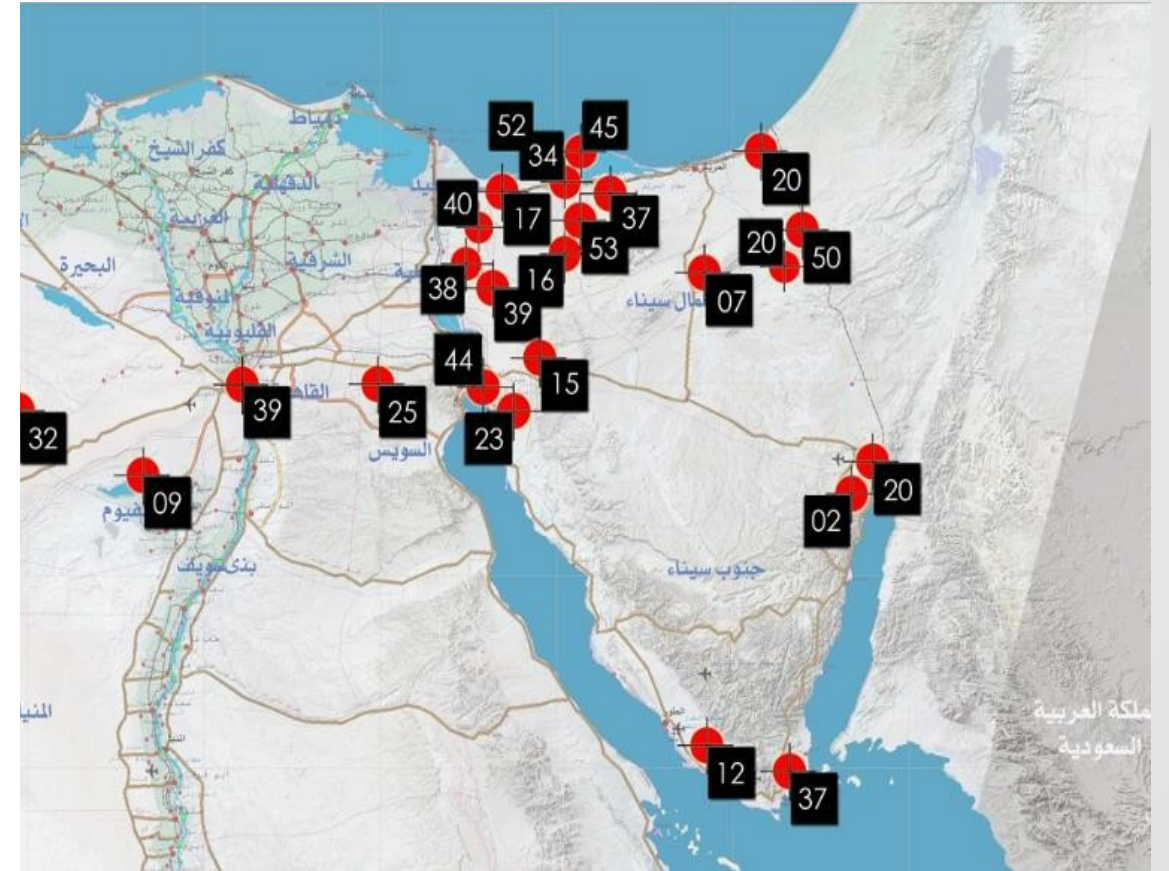
Framework

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## DEVELOPMENT OLYMPICS OF SUEZ CANAL REGION (2015): “HOPE AND WORK” AND HOW TO WRITE THE HISTORY OF THE FUTURE

- Resulted in ideas and scenarios that assure the sustainable development dimension in Suez Canal Region



## DEVELOPMENT OLYMPICS OF SUEZ CANAL REGION (2015): “HOPE AND WORK” AND HOW TO WRITE THE HISTORY OF THE FUTURE

كلية الفنون الجميلة جامعة الاسكندرية  
الثلاثاء

18 ابريل 2015

ندوة معمارية بعنوان



يوم المعماري المصري  
نقابة المهندسين المصرية  
2015



المسابقة المعمارية العمرانية  
دعوة للمشاركة في المسنولية

أولومبياد "الأمل والعمل" بناء  
الانسان ومجتمعات تنمية إقليم  
قناة السويس



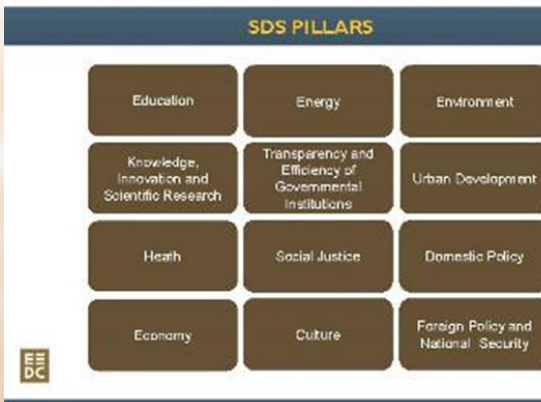
Concepts

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# EGYPT 2030 VISION



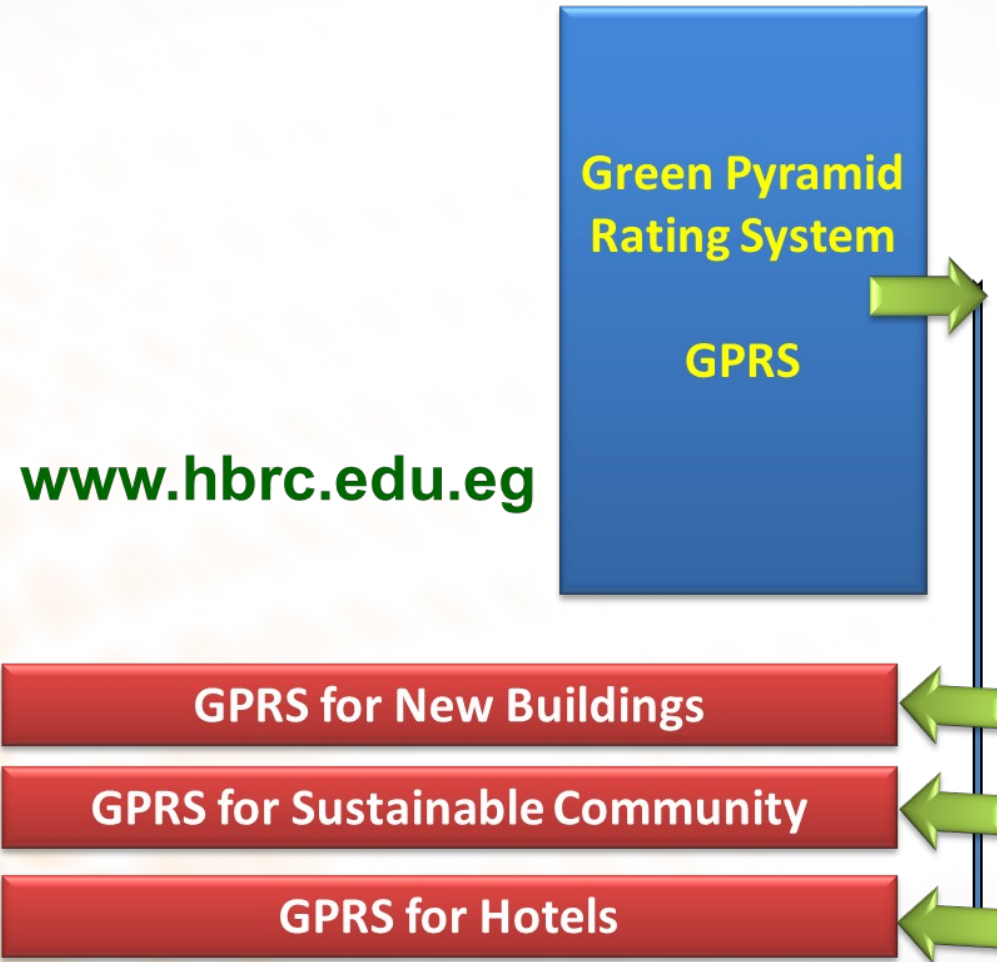
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# GREEN PYRAMID RATING SYSTEM (GPRS)



Concepts

Framework

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## SUSTAINABLE MEGA PROJECTS (2016)

- Resulted in different sustainable Mega Projects in different sectors including Culture Heritage, Tourism and Energy



Concepts

Framework

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# GREEN HERITAGE (2018)

IBUE  
The British University in Egypt  
الجامعة البريطانية في مصر

Under the Auspices of  
Mr. Mohamed Farid Khamis  
Chairman of the Board of Trustees  
The British University in Egypt  
Professor Ahmed Hamad  
Provost  
The British University in Egypt

3<sup>rd</sup> International Conference  
Organized by  
Farouk ElBaz Center for  
Sustainability and Future Studies

**GREEN HERITAGE**  
Chance - Change - Challenge  
6<sup>th</sup> - 8<sup>th</sup> March 2018  
BUE Campus El Sherouk

Day 02  
March 07/2018  
PANEL DISCUSSION:  
Green Worship House Competition

Housing and Building  
National Research Center  
Chairman\ Prof. Khalid M. El-Zahaby  
مسابقة تصميم  
دور عبادة بمعايير العمر الأخضر

KEYNOTE SPEAKERS  
Prof. Khalid El-Zahaby  
Prof. Omima Salah  
Prof. Ahmed Rashed  
Dr. Walaa Salah

SPONSERS  
ARDIC ARCHPLAN TATWEER MISH MAKRAM  
IBUE NOTTINGHAM TRENT UNIVERSITY  
LEEDS METRO UNIVERSITY northumbria UNIVERSITY NEWCASTLE  
UNIVERSITY OF LEEDS TATWEER MISH

IBUE  
The British University in Egypt  
الجامعة البريطانية في مصر

Invitation

**GREEN HERITAGE**  
Chance - Change - Challenge  
6-8 of March 2018

The Third International Conference on  
Sustainability and the Future

**BUE Campus El Sherouk**



Concepts

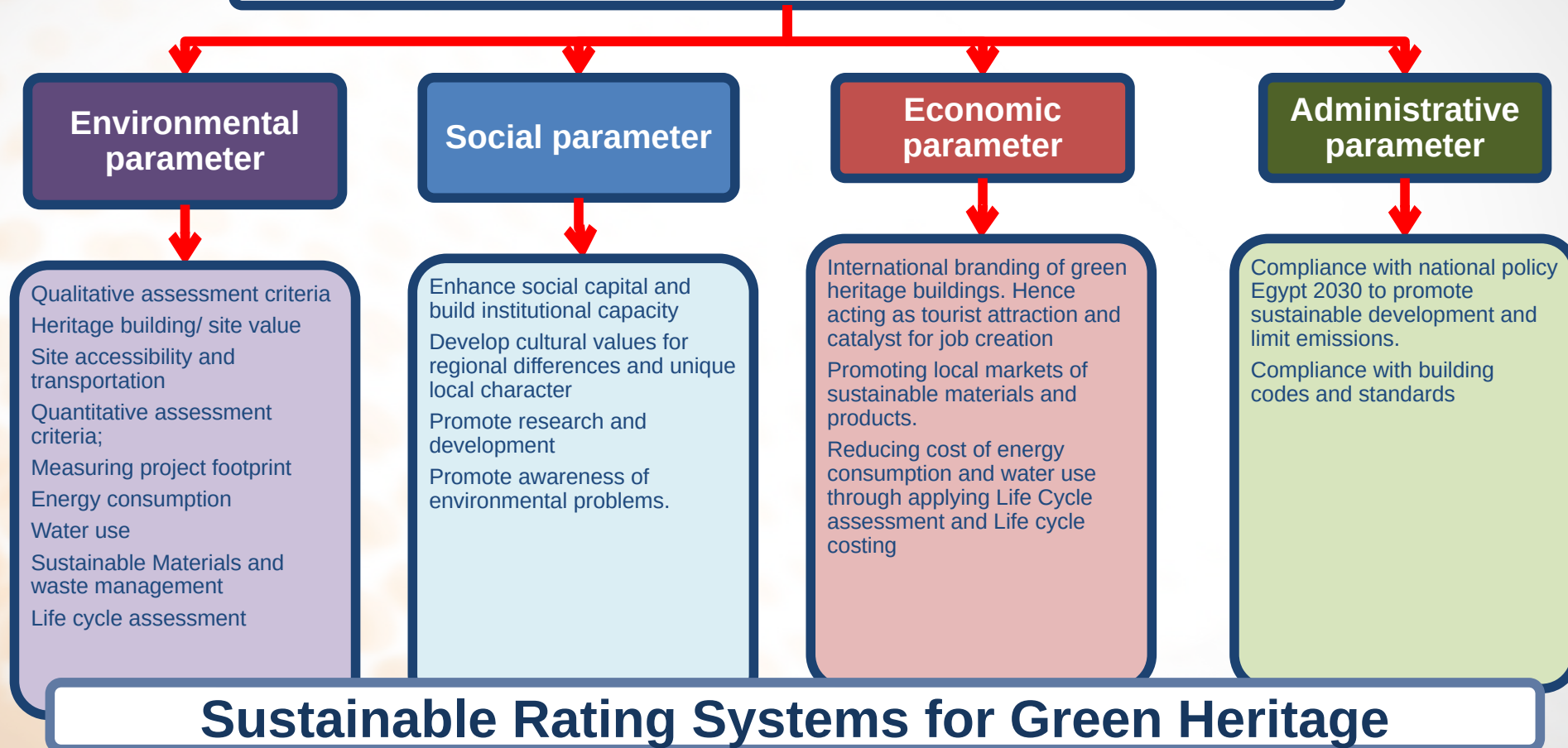
Framework

CASE  
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# GREEN HERITAGE (2018)

## Parameters of Green Heritage Initiative



Concepts

Framework

CASE STUDIES

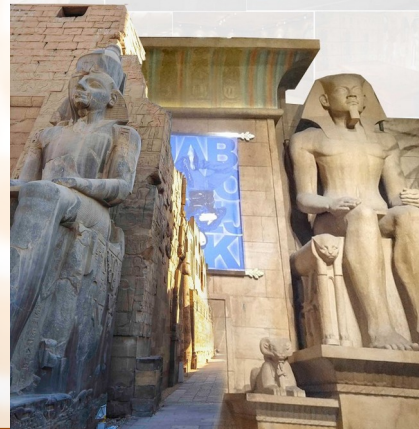
Concluding Thoughts

# CIVILIZATION RIGHTS TO BUILD CIVILIZATION (2017-2018)



## حقوق حضارة لبناء حضارة ©

- هي قضية جدلية مصرية مصرية ضمن المبادرات القومية لإكاديمية البحث العلمي  
- تهدف الحملة إلى تسليط الضوء على الحقوق الأدبية، والمادية، للدولة المصرية من خلال استغلال الآثار، والحضارة المصرية القديمة في أغراض تجارية بأي شكل كانت  
- تحمي قوانين الملكية الفكرية الدولية استخدام علامة تجارية لمنتج غذائي، أو تجاري، وتجريم على الغير استخدامه بدون ترخيص، ودفع مقابل مادي  
- ولا تعطى نفس الحق لأعظم حضارة عرفها التاريخ والتي لها علم مرتبط بالموقع والموضع والنهج والمنتج وعلم العلوم علم المصريين



## CIVILIZATION RIGHTS TO BUILD CIVILIZATION ©

- A CONTROVERSIAL EGYPTIAN ISSUE WITHIN THE NATIONAL INITIATIVES OF THE ACADEMY OF SCIENTIFIC RESEARCH.
- THE CAMPAIGN AIMS TO SHED LIGHT ON THE MORAL AND MATERIAL RIGHTS OF THE EGYPTIAN STATE THROUGH THE EXPLOITATION OF ANTIQUITIES AND ANCIENT EGYPTIAN CIVILIZATION FOR COMMERCIAL PURPOSES IN ANY FORM.
- INTERNATIONAL INTELLECTUAL PROPERTY LAWS PROTECT THE USE OF A TRADEMARK OF A FOOD OR COMMERCIAL PRODUCT, CRIMINALIZE UNAUTHORIZED USE OF IT, AND PAYMENT OF MATERIAL.
- THE SAME RIGHT IS NOT GIVEN TO THE GREATEST CIVILIZATION KNOWN TO HISTORY. WHICH HAS A SCIENCE RELATED TO LOCATION, POSITION, APPROACH & PRODUCT "THE EGYPTOLOGY SCIENCE".



Concepts

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Thoughts

# CIVILIZATION RIGHTS TO BUILD CIVILIZATION (2017-2018)



آخر الأخبار

الرعاة

المشاركة

المحكمون

القواعد

المراحل

تعريف

الرئيسية

حقوق حضارة

Log In

## مسابقة حقوق حضارة لبناء حضارة

آخر موعد للتقديم: 1 أبريل 2018

الجوائز | تسجيل



رعاة  
المسابقة

### جوائز المسابقة

10 آلاف جنيه للمركز الثالث



40 آلاف جنيه للمركز الأول



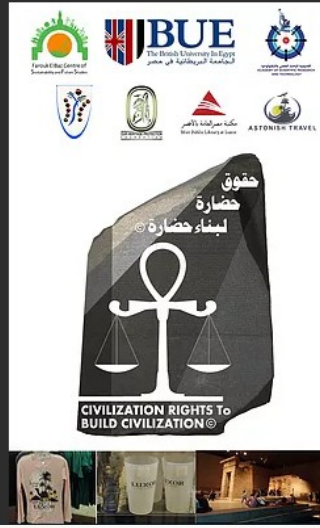
5 آلاف جنيه للمراكز الرابع والخامس والسادس



20 آلاف جنيه للمركز الثاني



## تعريف بالمسابقة



## حقوق حضارة لبناء حضارة مبادرة وطنية لأكاديمية البحث العلمي والتكنولوجيا

في الوقت الذي يُفرض فيه قوانين وقواعد صارمة فيما يتعلق بحقوق الملكية الفكرية على مستوى العالم سواء للأعمال الفنية أو الإنتاج الأدبي أو العلامات التجارية للشركات الخ، يتم إستغلال التراث المصري متمثلاً في درر وكنوز تعرض في جميع متاحف العالم مثل راس نفرتيتي ببرلين أو حجر رشيد بالمتحف البريطاني أو معبد دندور بالمتروبوليتان أو في صورة مشروعات مثل فندق الأقصر لاس فيجاس أو معارض لمستنسخات فرعونية والذي تتربح منه شركات وهيئات أجنبية مليارات الجنيهات دون أي اعتبارات تتعلق بحقوق الشعب المصري الفكرية على أساس أن هذا التراث هو في الأصل نتاج حضاري وإبداعي لهذا الشعب العظيم.

ومن هذا المنطلق ويتمويل ورعاية أكاديمية البحث العلمي، ينظم مركز فاروق الباز للإستدامة ودراسات المستقبل بالجامعة البريطانية بمصر مسابقة قومية لحصر وتوثيق حالات إستغلال التراث المصري مع إقتراح آليات وتطبيقات عملية فيما يتعلق بالحقوق الفكرية لمصر في كل مشروع أو منظومة أو منشأة تتربح من توظيف التراث الأصلي أو المستنسخ من حضارة مصر في العالم على المستوى لادبي والمادي والتاريخي والأخلاقي والسياسي.

والمسابقة مفتوحة لجميع الأفراد والجامعات والمؤسسات والشركات والهيئات العاملة بجمهورية مصر العربية لتقديم إقتراحات وأفكار تتعلق بالتعامل الممكن مع إحدى الحالات التي يتم من خلالها التربح من تراث الحضارة المصرية، على سبيل المثال لا الحصر:

- متاحف أو معارض عالمية تقوم بعرض تراث وأثار مصرية أصلية
- مشروعات بحثية قائمة على تراث مستنسخ من الحضارة المصرية مثلاً، كإنشاء الأقصر

Concepts

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# THINK CIVILIZATION



اقتصاد مزدهر  
اقتصاد مزدهر - فرصة عالمية  
اقتصاد مزدهر - استثمار فاعل  
اقتصاد مزدهر - تنافسية جاذبة  
اقتصاد مزدهر - جودة مستقل

مجتمع حيوي  
مجتمع حيوي - قيادة راسخة  
مجتمع حيوي - بيئة عامرة  
مجتمع حيوي - تلبية تطلعات

- The Saudi 2030 vision is essentially about building a civilization.
- As you attend and participate in the activities of this conference for the next two days, reflect on the Civilization Model discussed today as a **holistic** umbrella and a means for relating the topics discussed in various sessions and panel discussions to the 2030 vision.



Concepts

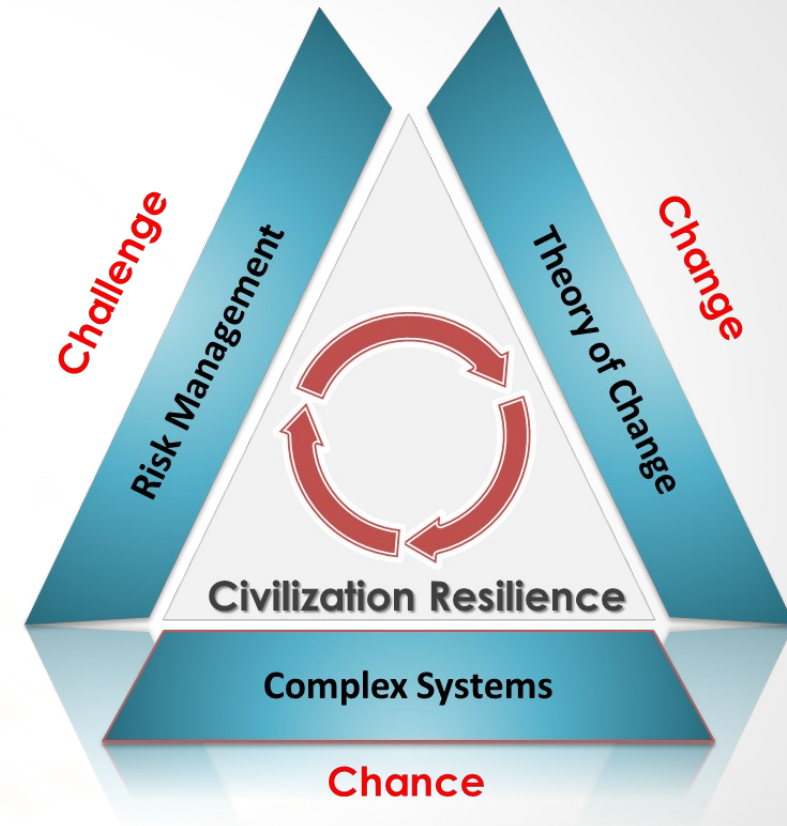
Framework

Case Studies

CONCLUDING  
THOUGHTS

## THINK RESILIENCE

- Use the 3Cs framework of Civilization Resilience (Chance, Challenge, and Change) as a vehicle for tackling the issues of resilience, reaping the opportunities, and reaching long-term solutions (rather than reactive short-term actions).
- The framework reflects a positive attitude to building far-reaching sustainable communities and forward-looking action to enhance resilience across scales and sectors of civilizations.





## THINK PARTNERSHIP

- Recognize the need for an integrated, multi-level, and multi-stakeholder approach to gather actors from local, regional, national and global scales, as well as from the academic, public and private domains on a common ground to build a civilization resilience because shocks and stresses most often don't stop at political boundaries
- There is a need for shared perspectives, common interpretations, and integrated efforts to achieve common goals



## THINK ACTIONS

- Consider the nature and types of action that can be done to promote resilience and incentivize the society at all scales (from students to seniors, from workers to leaders, etc.) to get involved.
- Remember that “knowing is not enough; we must apply. Being willing is not enough; we must do”
  - Leonardo da Vinci





**THANK YOU!**

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