



United Nations
Educational, Scientific and
Cultural Organization



UNESCO-VISUS MULTIHAZARD METHODOLOGY



Mitigating the Impact of
Natural Risk in Africa
23-26 October 2017,
Cairo, Egypt



The new Agenda:

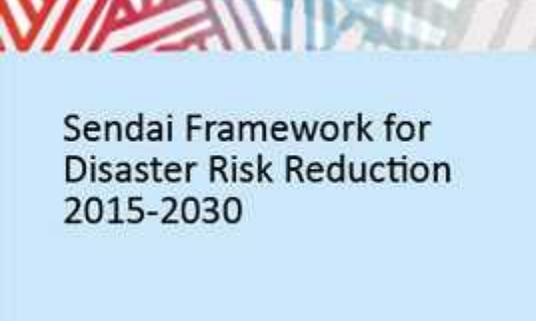
25. (...) We will strive to provide children and youth with a nurturing environment for the full realization of their rights and capabilities, helping our countries to reap the demographic dividend, including through **safe schools** and cohesive communities and families.

Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

4.a:

Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all





Sendai Framework for
Disaster Risk Reduction
2015-2030

Priority 1: Understanding disaster risk

Priority 2: Strengthening disaster risk governance to manage disaster risk

Priority 3: Investing in disaster risk reduction for resilience

Priority 4: Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction

It calls among others to:

the strengthening of disaster resilient public and private investments, particularly through structural, non-structural and functional disaster risk prevention and reduction measures in critical facilities, in particular schools and hospitals and physical infrastructure.



Worldwide Initiative for Safe Schools





Who has signed up to WISS?
List of Safe Schools Leaders
(as at November 2015-Evolving Group)

- | | |
|------------|-------------------------|
| Algeria | Kyrgyzstan |
| Armenia | Lao PDR |
| Brazil | Lebanon |
| Cambodia | Madagascar |
| China | México |
| Costa Rica | Nepal |
| Croatia | Nigeria |
| Ecuador | Panama |
| Finland | Philippines |
| Georgia | Qatar |
| Honduras | South Africa |
| Indonesia | St Vincent & Grenadines |
| Italy | Thailand |
| I.R. Iran | Tunisia |
| Japan | Turkey |
| Kazakhstan | Turkmenistan |
| | USA |

41 Countries



Global Alliance for Disaster Risk Reduction & Resilience in the Education Sector



United Nations
Educational, Scientific and
Cultural Organization



GFDRR
Global Facility for Disaster Reduction and Recovery

INEE



Save the Children

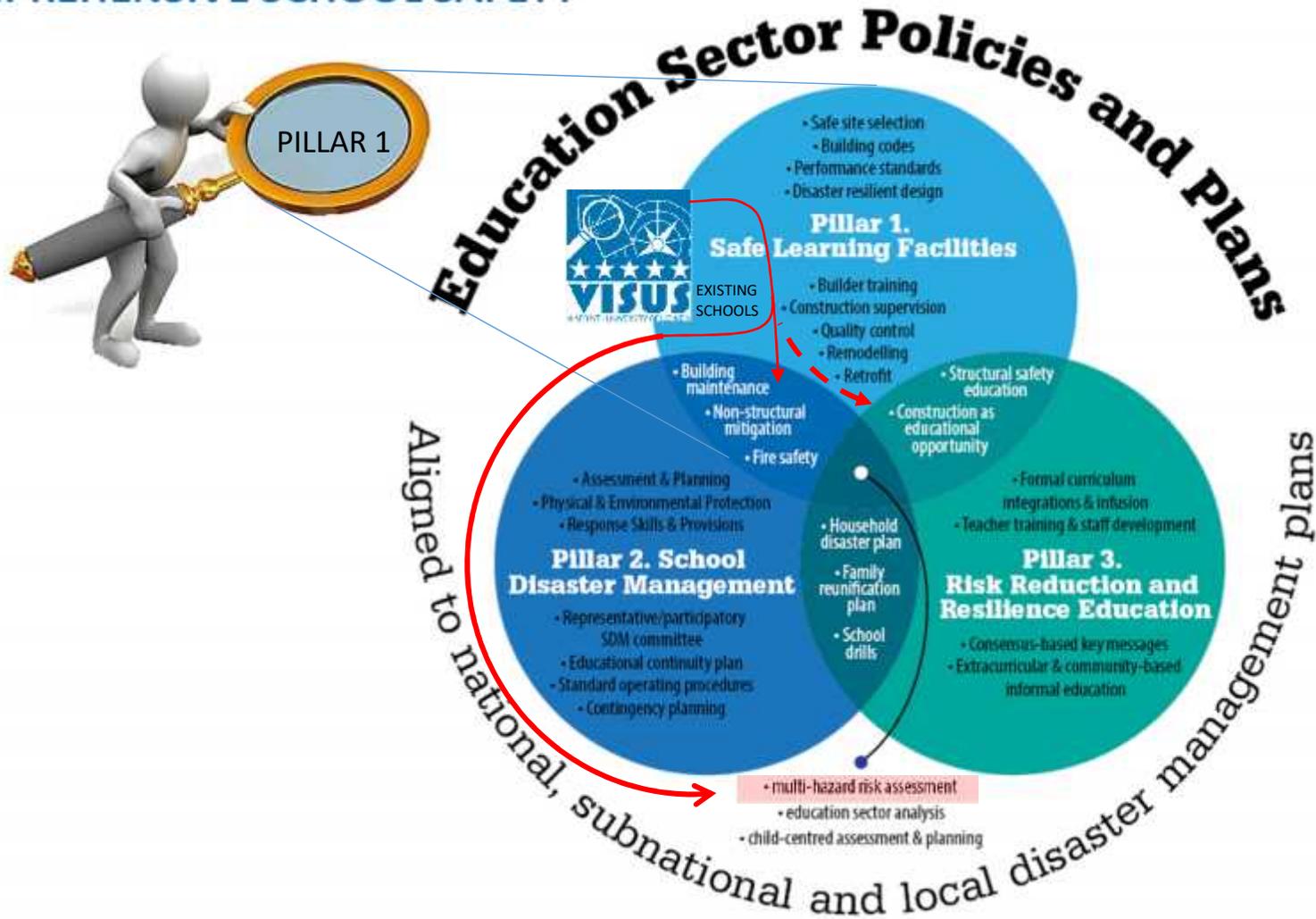
RET



Prof. Stefano Grimaz – Universidad de Udinese, Italia
Jair Torres - UNESCO HQ

VISUS: A SUPPORT FOR DECISION MAKERS

THE THREE PILLARS OF THE COMPREHENSIVE SCHOOL SAFETY



Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector (GADRRRES)



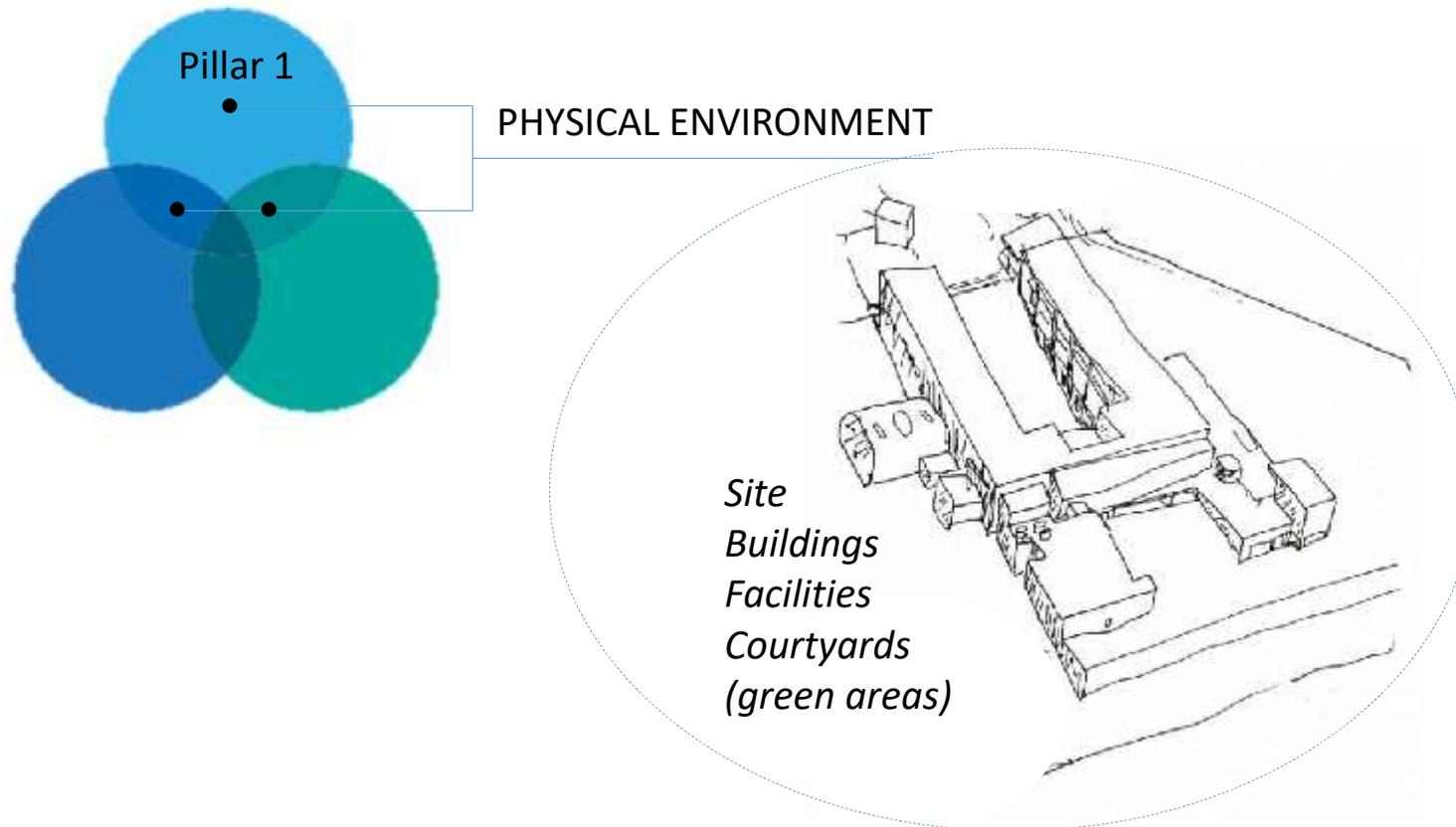
1. To protect learners and education workers from death, injury, and harm in schools
2. To plan for educational continuity in the face of all expected hazards and threats
3. To safeguard education sector investments
4. To strengthen risk reduction and resilience through education

SAFETY GOALS





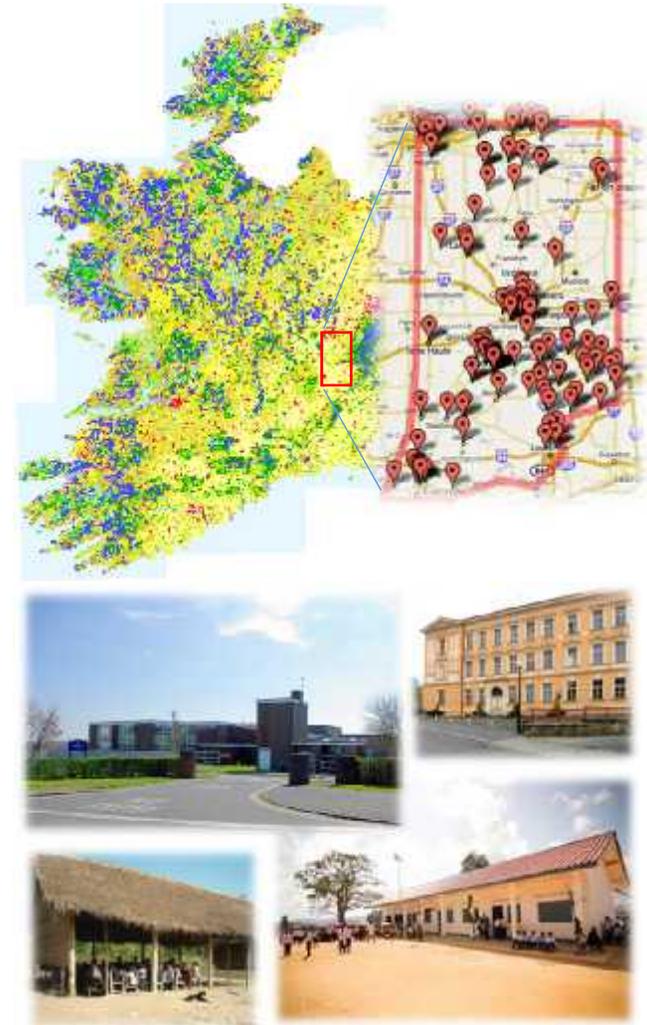
The components of the physical environment



CONCERNS OF DECISION-MAKERS

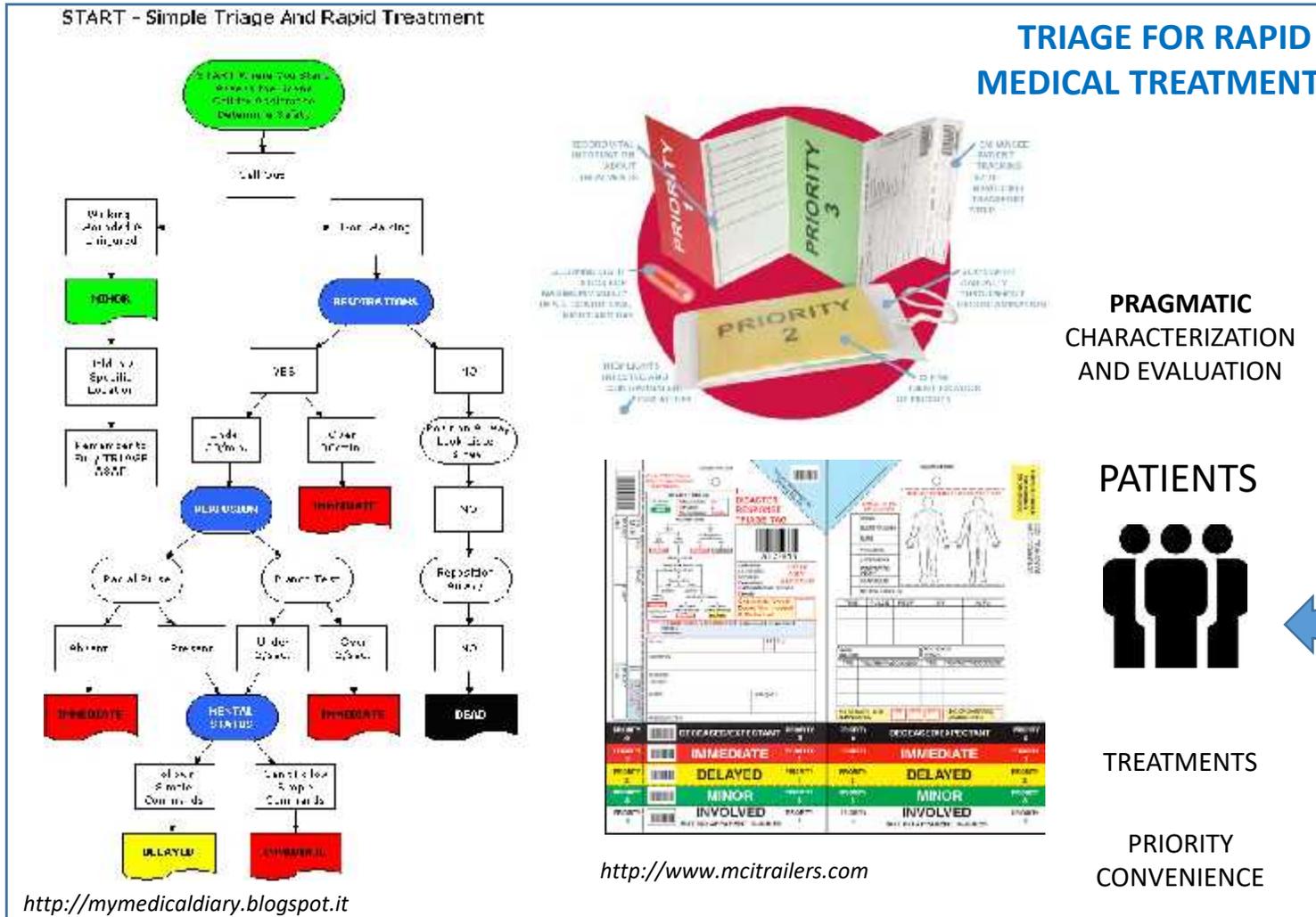
- **WHAT IS THE ACTUAL SAFETY SITUATION?**
- **WHICH SCHOOL SHOULD BE PRIORITIZED?**
- **WHY?**
- **WHAT INTERVENTIONS ARE NECESSARY (4Rs)?**
- **HOW MUCH WOULD THE INTERVENTION COST?**
- **HOW MANY INTERVENTIONS ARE FEASIBLE GIVE THE AVAILABLE RESOURCES?**
- **HOW SHOULD WE COMMUNICATE THE RISK LEVEL TO THE COMMUNITY?**

AT REGIONAL LEVEL

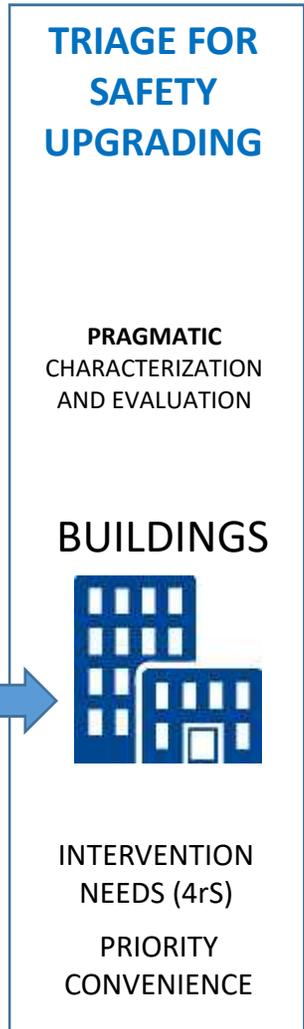


PRIORITIZATION OF THE TREATMENTS FOR A COST-EFFECTIVE RESOURCES ALLOCATION

DISASTER MEDICINE



PLANNING



INPUT

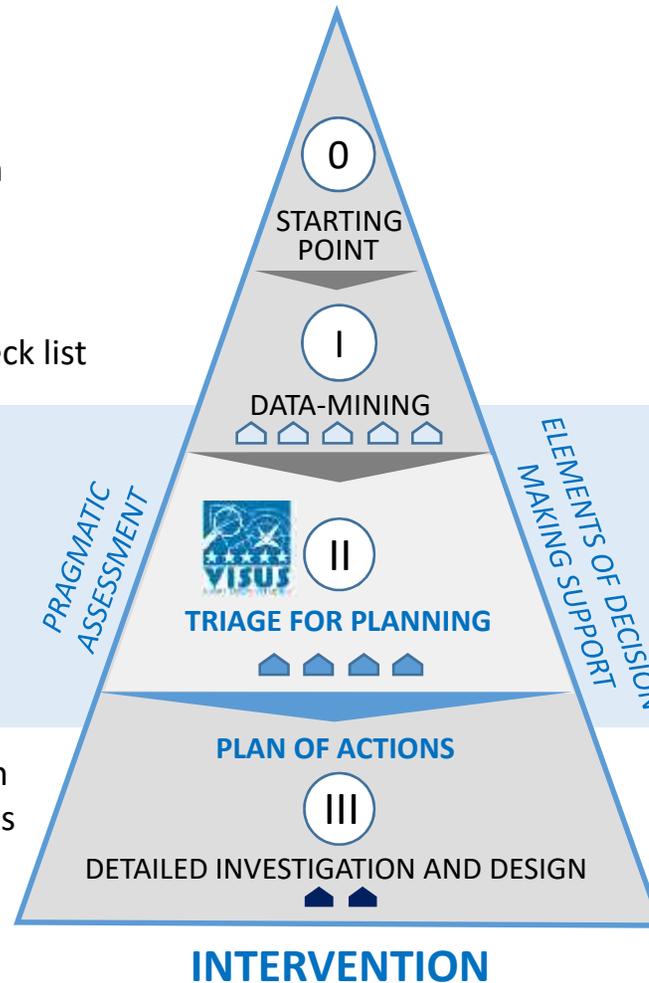
data-approach

- Desk analysis of available documentation
- Collection data
- Questionnaire/form/check list

- Visual inspection by trained surveyors

- Detailed data acquisition and quantitative analyses

Level of knowledge



OUTPUT

decision making information

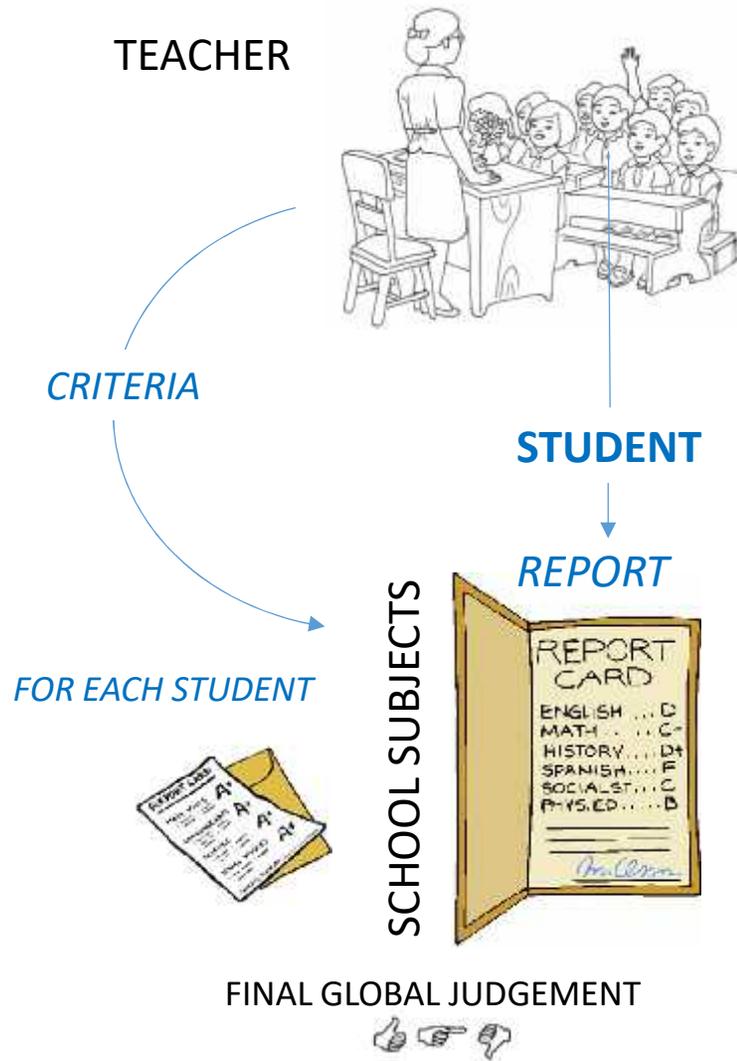
- Preliminary classification

- Class or index of risk
- Priority ranking for deepening/intervention

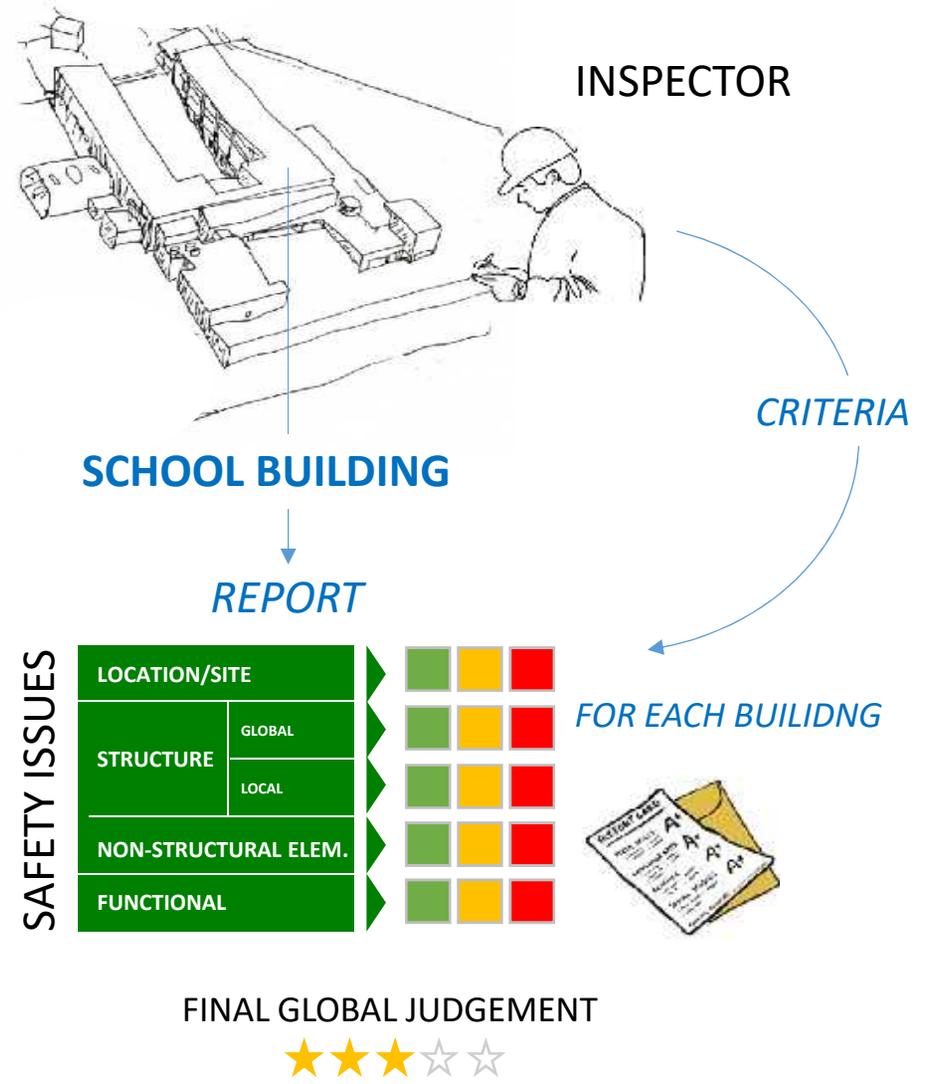
- Safety-weaknesses characterization
- Intervention-needs identification
- Budget allocation estimation
- Decision support for multicriteria definition of intervention strategies

- In-depth/specific assessment
- Safety design
- Detailed cost quantification

CLASS



SCHOOL COMPLEX

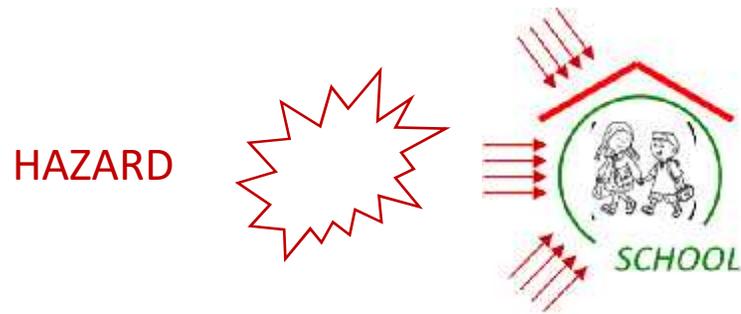


SAFETY ISSUES	LOCATION/SITE	■	■	■	
	STRUCTURE	GLOBAL	■	■	■
		LOCAL	■	■	■
	NON-STRUCTURAL ELEM.	■	■	■	
	FUNCTIONAL	■	■	■	



SAFETY - HAZARD OR HAZARDS?

INTEGRATED APPROACH



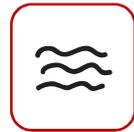
EARTHQUAKES



WINDSTORMS



FLOODS



FIRE



ORDINARY USE



VISUS WORLDWIDE

COUNTRIES

Peru – 60
El Salvador – 100
Haiti – 100



Italy – 1022
Laos – 10
Indonesia – 160
Mozambique – 100

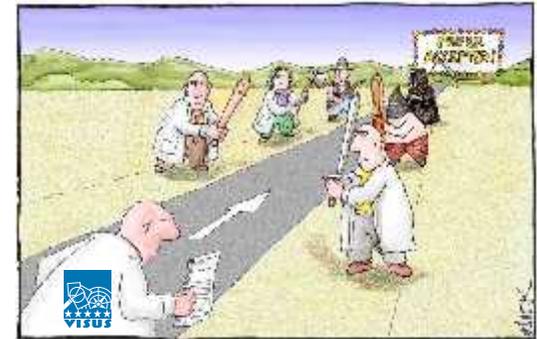
Indonesia III, El Salvador II, Honduras, Guatemala, St. Kitts and Nevis, Guyana, Saint Lucia, Antigua and Barbuda, Monserrat, Turks and Caicos Islands, and Mongolia.



Under negotiation for 2018

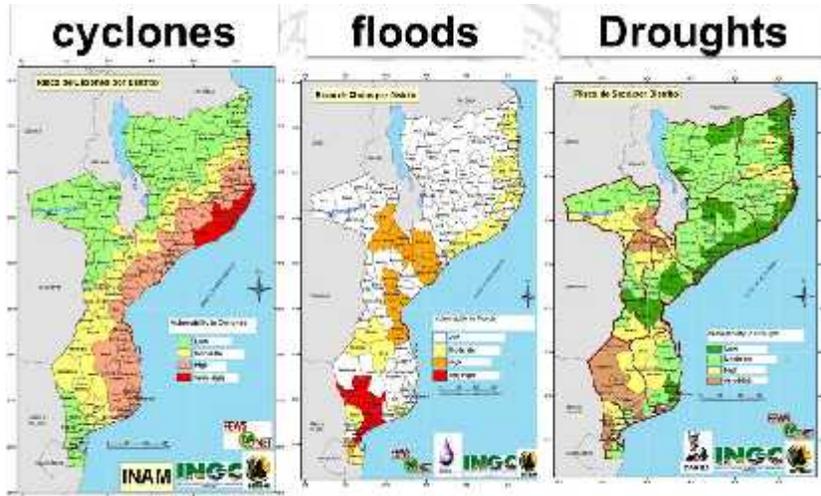
Institutions that have peer-reviewed the method and that recommend it:

1. UNESCO-IHE (The Netherlands)
2. Beijing Jiaotong University (China)
3. Catholic University of Chile (Chile)
4. El Salvador University (El Salvador)
5. Building Research Institute (Japan)
6. Institute of Seismology (Kazakhstan)
7. Istanbul Technical University (Turkey)
8. Bandung Institute of Technology (Indonesia)
9. National Center for Disaster Prevention (Mexico)
10. Japan International Cooperation Agency (Japan)
11. Technical University of Civil Engineering (Romania)
12. Research Institute for Human Settlement (Indonesia)
13. National Research Institute of Astronomy and Geophysics (Egypt)
14. International Institute of Seismology and Earthquake Engineering (Japan)
15. Japan-Peru Center for Earthquake Engineering and Disaster Mitigation (Peru)
16. Tokyo Polytechnic University - School of Architecture & Wind Engineering (Japan)

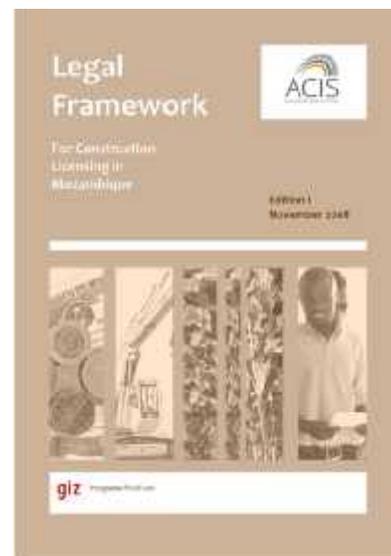
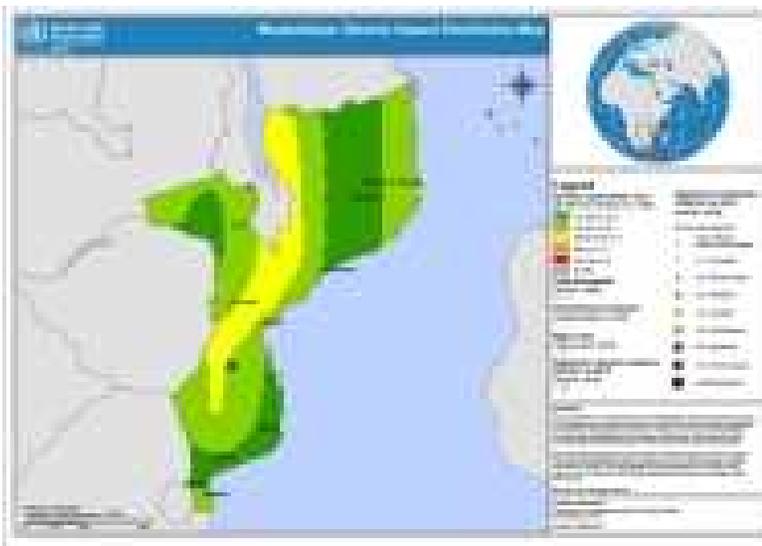


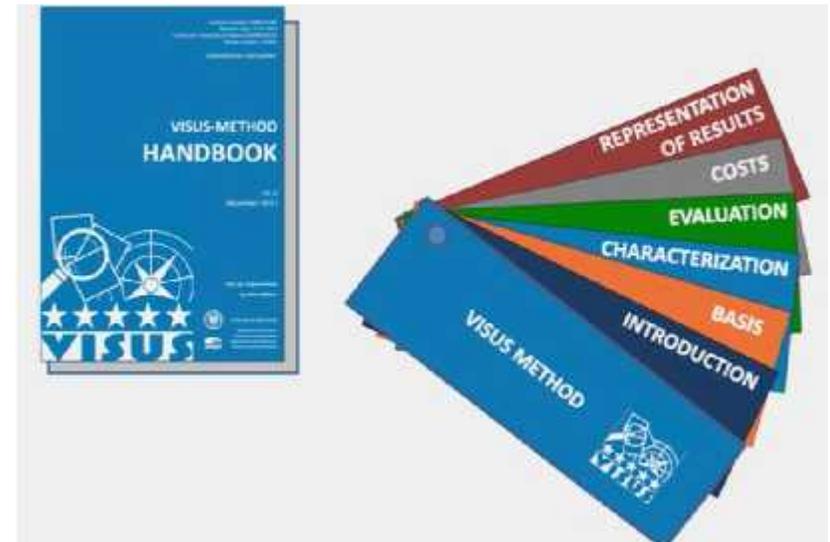
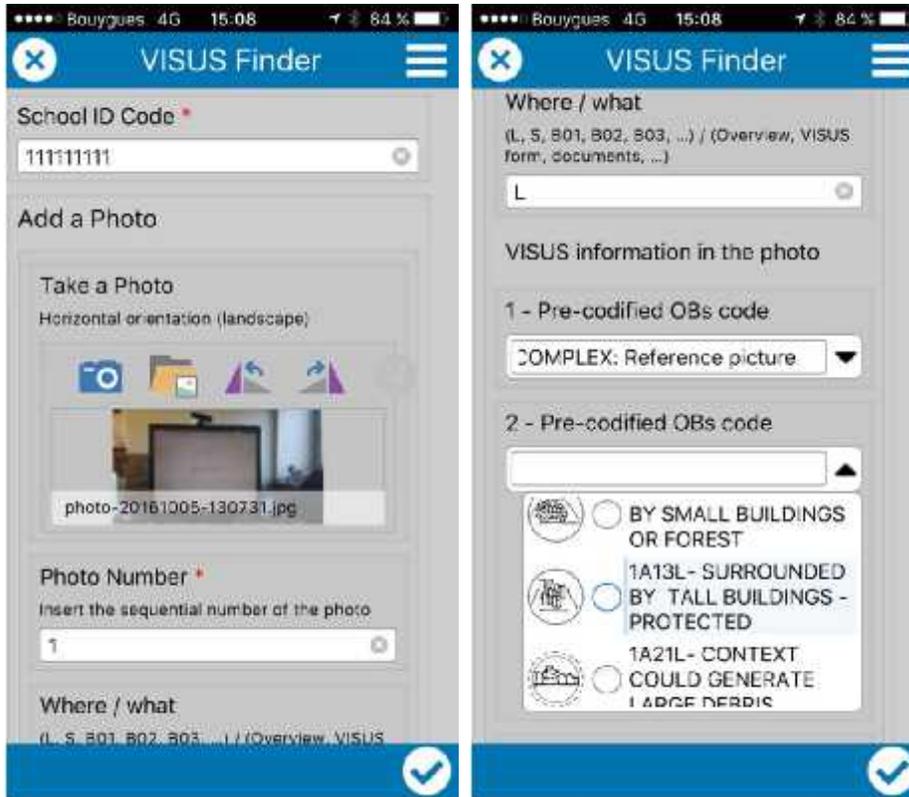
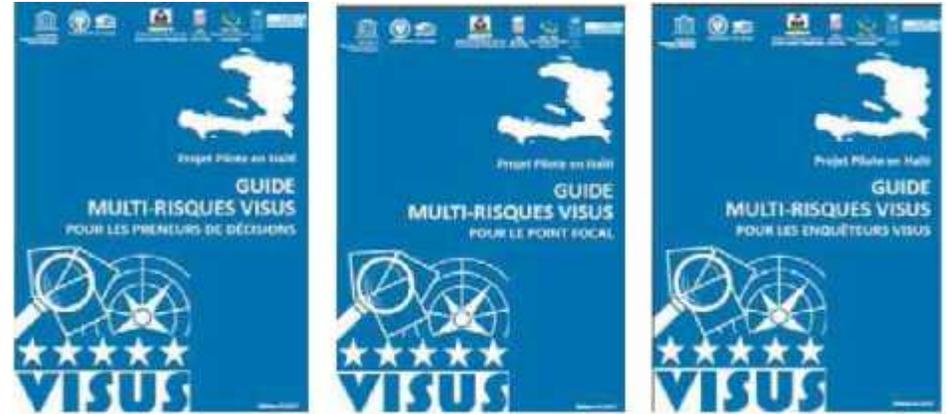
1. Methodology Adaptation to the country and local realities and particularities
(Risk profile [V+E] and building typologies)
2. Capacity building and strengthening of local and national capacities for the assessment of critical infrastructure
3. Development of the assessment
4. Reporting (Collective and Individual per school)
5. Planning for intervention





Earthquakes





POLICY MAKERS



VISUS: A CAPACITY BUILDING TOOL

TRAINERS



SURVEYORS





School complex



Location and schoolyard and photo reportage



School building and photo reportage





Ecole nationale de Parrois

HT312-02100010



IDENTIFICATION

Ecole nationale de Parrois

Country: Haiti

Province, district: Quartier-Morin

Address:
Pont Parrois

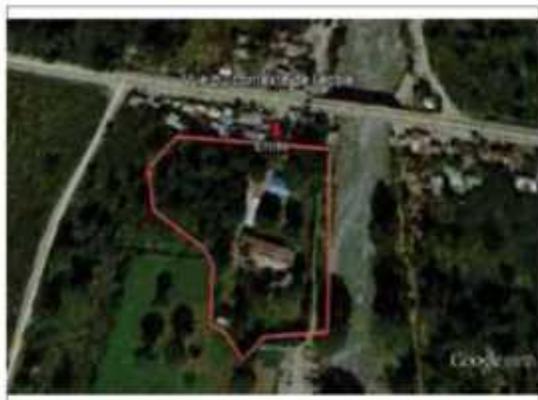
LOCATION



COORDINATES

LATITUDE: 19 41'19.36" N
LONGITUDE: 72 08'28.90" W
ALTITUDE: 18 m m

CONTEXT



SCHOOLYARD AND SCHOOL BUILDINGS



	TOTAL NUMBER	TOTAL AREA
TOTAL BUILDINGS	6	1379 m ²
MAIN BUILDINGS	4	1314 m ²
ANCILLARY BUILDINGS	2	65 m ²
CLASSROOMS	15	
SCHOOLYARD AREA		4718 m ²
TOILETS (NUMBER)	2	2
PEOPLE IN THE SCHOOL	STUDENTS	TEACHERS
	143	6
	OTHER	2

EDUCATIONAL TYPOLOGY

- PRESCHOOL (TYPICAL AGE: 3-6)
- FUNDAMENTAL (TYPICAL AGE: 6-14)
- SECONDARY SCHOOL (TYPICAL AGE: 14-18)
- OTHER

OWNER

- PUBLIC
- PRIVATE
- RELIGIOUS

USAGE

- CURRICULAR ACTIVITIES
- EXTRACURRICULAR ACTIVITIES

SPECIFIC VALUES / FUNCTIONS

- CULTURAL HERITAGE
- USED FOR EMERGENCY PURPOSES

BUILDING TYPES

	PERMANENT	SEMI-PERMANENT	NON PERMANENT
MAIN BUILDINGS	4	-	-
ANCILLARY BUILDINGS	2	-	-

MULTI-HAZARD EVALUATIONS

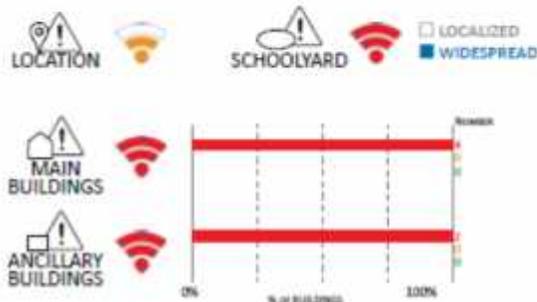
REFERENCE HAZARDS



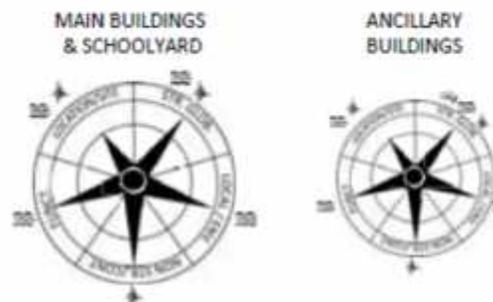
EARLY WARNING

VISUS SAFETY INDICATORS - FOR REFERENCE HAZARDS

SAFETY EVALUATIONS



WARNING ROSES - ENVELOPE



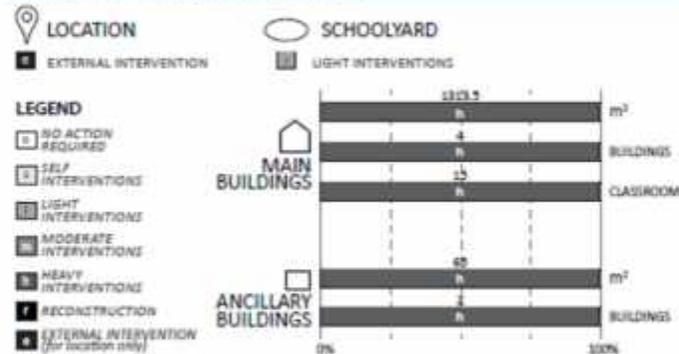
VISUS MULTI-HAZARD SAFETY STARS



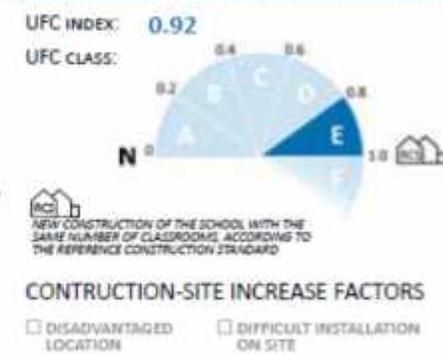
COMPLEMENTARY EVALUATIONS



SAFETY UPGRADING ACTIONS



UPGRADING FINANCIAL COMMITMENT (UFC)





COMPLEMENTARY EVALUATIONS

ACCESSIBILITY



ACCESSIBLE

COMFORT



POOR

WATER & SANITATION



POOR

SECURITY



UNCONTROLLED OR UNLIMITED ACCESS

VISUS CHARACTERIZATION PROFILE: PROFILE QUALIFIERS (PQs)

	REACHABILITY SCHOOL COMPLEX (EASY TO REACH)		SALUBRITY PRESENCE OF DISCOMFORTS WITH POT. CONSEQUENCES ON HEALTH		DANGERS PEOPLE COULD SLIP (WITH CONSEQUENT DIFFICULT SITUATIONS)		DANGERS PEOPLE COULD BUMP ON PROTRUDING ELEMENTS, WITH POT. DIFFICULT SITUATIONS										
	TRIGGER / SOURCE NO TRIGGERING SOURCES		EXPECTED FIRE SCENARIO NO EXPECTED FIRE SCENARIO		PROTECTION SYSTEM NO PROTECTION SYSTEM												
	HAZARD INTENSITY WATER DEPTH - HIGH		HAZARD INTENSITY WATER VELOCITY MODERATE		HAZARD MODIFIERS POTENTIAL AMPLIFICATION OF THE ACTION		PROTECTION FROM HAZARD NO PROTECTION		HAZARD MODIFIERS POTENTIAL PRESENCE OF DEBRIS		HAZARD INTENSITY EXTREME ACTION		UNDERMINING UNDERMINING WITH GROUND EROSION AND NO DIGGING OUT OF FOUNDATIONS		EGRESS SAFE PATH TO SAFE ZONE		EGRESS ALTERNATIVE SAFE PATH TO SAFE ZONE
	HAZARD INTENSITY HIGH HAZARD		HAZARD MODIFIER HAZARD AMPLIFICATION		INDUCED HAZARD POTENTIAL AGGRAVATION		EGRESS SAFE PATH TO SAFE ZONES										
	HAZARD INTENSITY HAZARD NEGLECTABLE/TRIVIAL																



HAITI PILOT PROJECT
Survey: 02/03/2017

HT312-02100010
p. 2





Ecole nationale de Parrois



PICTURES REPORTAGE

LOCATION & SCHOOLYARD



Obs: representative picture of the school.

PQs:



Obs: pot. falls due to uneven floor or tripping hazards; pot. hits with protruding objects or sharp objects.

PQs:



Obs: unrestricted waste collection or noxious area.

PQs:



Obs: representative picture of the schoolyard.

PQs:



Obs: upstream highly erodible soil; open land - upstream; gentle or no slope - upstream; potential scour could impact the school complex.

PQs:



Obs: location; view of the school.

PQs:



Ecole nationale de Parrois

MAIN BUILDINGS

B01



BUILDING TYPE



CONSTRUCTION DATE: 2007
STANDARD: -

GEOMETRY AND DIMENSIONS



PLAN SHAPE:
SIMPLE, COMPACT
ELEVATION SHAPE:
SIMPLE

NUMBER OF STRUCTURAL UNITS: 1

AREA [m²]: 455

VERTICAL STRUCTURAL MATERIAL AND SYSTEM



ROOF STRUCTURE



ROOF COVERING



UTILIZATION

- CLASSROOMS: 3
- MALE TOILETS
- OFFICES
- KITCHEN
- GYM
- LIBRARY
- STORAGE
- OTHER USES
- UNUSED
- FEMALE TOILETS
- LABORATORY
- CANTEEN
- AUDITORIUM
- ARCHIVE
- BEDROOMS
- TECHNICAL ROOM
- UNDER CONSTRUCTION

VISUS SAFETY INDICATORS: WARNING ROSES AND SAFETY STARS



COMPLEMENTARY EVALUATIONS

WATER & SANITATION



MAINTENANCE



ACCESSIBILITY



COMFORT



SECURITY



CONTENT/EQUIPMENT



VISUS CHARACTERIZATION PROFILE: PROFILE QUALIFIERS (PQs)

	SALUBRITY PRESENCE OF DISCOMFORTS WITH POT. CONSEQUENCES ON HEALTH		DANGERS PEOPLE COULD FALL WITH CONSEQUENT DIFFICULT SITUATIONS		EGRESS SAFE EGRESS FROM BUILDING										
	TRIGGER / SOURCE NO TRIGGERING SOURCES		EXPECTED FIRE SCENARIO PREDISPOSED TO SMALL FIRE, NO TRIGGER		PROPAGATION SLOW PROPAGATION OF SMOKE AND/OR FIRE IN THE BUILDING		PROTECTION SYSTEM NO PROTECTION SYSTEM		STRUCTURAL BEHAVIOUR NO FIRE EFFECTS ON STRUCTURE		EGRESS MULTIPLE EGRESS PATHS (MORE ALTERNATIVES)				
	HAZARD INTENSITY WATER DEPTH - HIGH		HAZARD INTENSITY WATER VELOCITY MODERATE		HAZARD AMPLIFIERS POTENTIAL AMPLIFICATION OF THE ACTION		PROTECTION FROM HAZARD NO PROTECTION		HAZARD AMPLIFIERS POTENTIAL PRESENCE OF DEBRIS		HAZARD INTENSITY EXTREME ACTION		INDUCED DANGERS FLOOR SUBMERGED		STRUCTURAL ROBUSTNESS CLASS REFERENCE CLASS, HIGH CLASS FOR FLOOD
	CONNECTION TO GROUND LOCAL ANCHORAGE, FREE		WATER LOAD BALANCE BALANCED WATER LOAD		STRUCTURAL ROBUSTNESS CLASS MODIFIED CLASS, HIGH CLASS FOR FLOOD		UNDERMINING UNDERMINING NOT CREDIBLE		LOCAL STRESS LOCAL STRESS CONCENTRATION		EGRESS IMPOSSIBLE TO REACH THE SAFE ZONE OR NO SAFE ZONE				
	HAZARD INTENSITY HIGH HAZARD		HAZARD AMPLIFIER HAZARD AMPLIFICATION		INDUCED HAZARD POTENTIAL QUETRACTION		STRUCTURAL ROBUSTNESS CLASS REFERENCE CLASS, VERY HIGH CLASS FOR EARTHQUAKE		ROBUSTNESS AMPLIFIERS REGULAR HORIZONTAL BEHAVIOUR		ROBUSTNESS AMPLIFIERS REGULAR VERTICAL BEHAVIOUR		ROBUSTNESS AMPLIFIERS MASS MODIFIER, UNIFORM		ROBUSTNESS AMPLIFIERS ADEQUATE RESISTANCE IN BOTH DIRECTIONS
	ROBUSTNESS MODIFIERS GOOD CONSTRUCTION AND MATERIAL QUALITY		STRUCTURAL ROBUSTNESS CLASS MODIFIED CLASS, VERY HIGH CLASS FOR EARTHQUAKE		LOCAL CRITICAL ISSUES NO LOCAL CRITICAL ISSUES		POTENTIAL FALL OF ELEMENTS NO CRITICAL ISSUES		EGRESS SAFE PATH TO SAFE ZONES						
	HAZARD INTENSITY HAZARD NEGLECTABLE/TRIVIAL		INDUCED HAZARD MODERATE INDUCED HAZARD		STRUCTURAL ROBUSTNESS CLASS REFERENCE CLASS, HIGH CLASS FOR WIND		CONNECTION TO GROUND ANCHORED TO GROUND		INCREASE OF STRESS FLOW INSIDE THE BUILDING CAUSING POTENTIAL DIFFICULTIES		STRUCTURAL ROBUSTNESS CLASS MODIFIED CLASS, HIGH CLASS FOR WIND		LOCAL CRITICAL ISSUES NO LOCAL CRITICAL ISSUES		INCREASE OF LOCAL STRESS UP/LIFT FORCE
	INCREASE OF LOCAL STRESS STRESS INCREASE IN CORRESPONDENCE OF EXTENSIONS		POTENTIAL FALL OF ELEMENTS FALL OF ELEMENTS EXTERNAL, HEAVY, LOCALIZED		EGRESS SAFE ZONE EASY TO REACH										



Ecole nationale de Parrois



PICTURES REPORTAGE

B01



Obs: false ceilings.

PQs:



Obs: unprotected and accessible raised area; medium openings (windows, doors) always open; small openings always open; protected foundation (e.g. rip rap); limited access to building.

PQs:



Obs: roof of veranda is extension of main roof; low slope; pitched roof.

PQs:



Obs: roof covering poorly anchored to structure.

PQs:



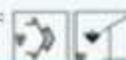
Obs: combustibles isolated; low light; moderate amount of books or wood-based furniture.

PQs:



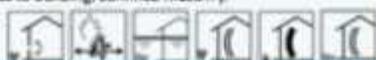
Obs: View of the building; pot; fall of trees or poles.

PQs:



Obs: Representative picture of the building; medium openings (windows, doors) always open; small openings always open; sheets; permanent building; multiple exits in the building allowing the separation of people flows; main building; shallow foundation; free flow of water into building; limited access to building; confined masonry.

PQs:





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ANCILLARY BUILDINGS

B06



BUILDING TYPE



CONSTRUCTION DATE: 2007
STANDARD: -

GEOMETRY AND DIMENSIONS



PLAN SHAPE:
SIMPLE, COMPACT
ELEVATION SHAPE:
SIMPLE

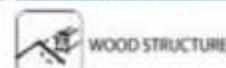
NUMBER OF STRUCTURAL UNITS: 1

AREA [m²]: 23

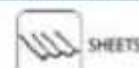
VERTICAL STRUCTURAL MATERIAL AND SYSTEM



ROOF STRUCTURE



ROOF COVERING



UTILIZATION

- CLASSROOMS MALE TOILETS OFFICES KITCHEN GYM LIBRARY STORAGE OTHER USES UNUSED
 FEMALE TOILETS LABORATORY CANTEEN AUDITORIUM ARCHIVE BEDROOMS TECHNICAL ROOM UNDER CONSTRUCTION

VISUS SAFETY INDICATORS: WARNING ROSES AND SAFETY STARS

ORDINARY USE
Normal conditions



Action

HEAVY INTERVENTIONS

FIRE



Action

NO ACTION REQUIRED

WATER
1.0-2.0 m



Action

HEAVY INTERVENTIONS

EARTHQUAKE
PGA 0.40-0.49 g



Action

HEAVY INTERVENTIONS

AIR
v < 62 km/h



Action

LIGHT INTERVENTIONS

MULTI-HAZARD



Action

HEAVY INTERVENTIONS

COMPLEMENTARY EVALUATIONS

WATER & SANITATION



MAINTENANCE



ACCESSIBILITY



COMFORT



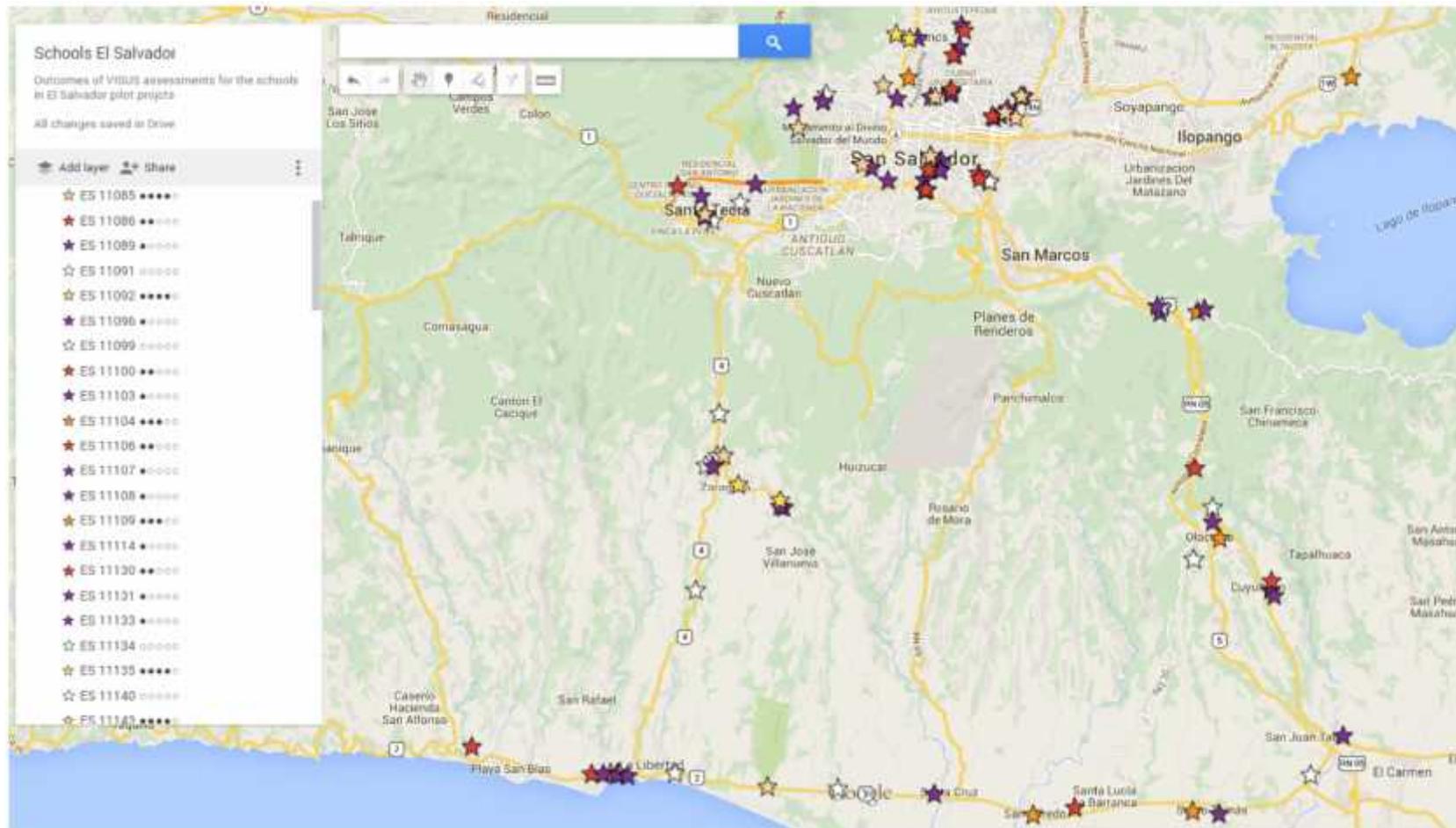
SECURITY



CONTENT/EQUIPMENT



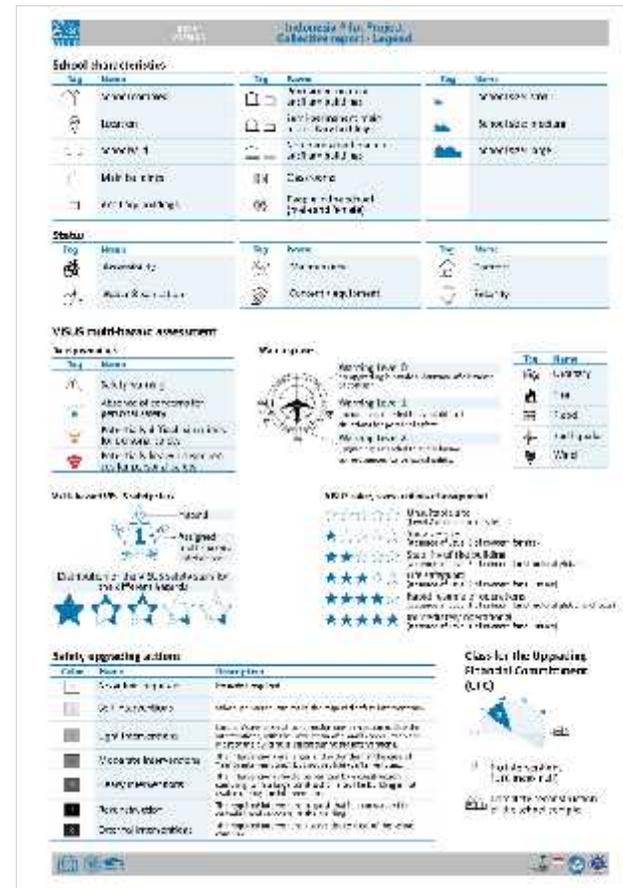
[Link](#) to google maps of El Salvador Pilot project schools.





VISUS MULTIHAZARD OUTCOMES

COLLECTIVE REPORT



IDENTIFICATION

ID 20219502

SMP NASIONAL

West Java

Sadang serang street, no. 17, sekeloa, coblong, bandung, 40134

MIDDLE SCHOOL

DECRPTION

SCHOOL CHARACTERISTICS

SCH-DOLLYARD AREA: 3000 m²

MAIN BUILDINGS: 2, 0, 0, 637 m²

ANCILLARY BUILDINGS: 1, 1, 1, 8 m²

CLASSROOM'S: 11, SIZE

PEOPLE IN THE SCHOOL: 653

STATUS

STATUS

- Partially Accessible
- FOOT
- RECO
- BNSK
- PAUK
- CONTROLLED ACCESS

VISUS MULTIHAZARD ASSESSMENT INDICATORS

VISUS MULTI-HAZARD ASSESSMENT

Indicators: LIDATION, SCHEDULE, KURUN BUILDING, ANELLAT BUILDING

Assessment: 1 star out of 5

Compass rose showing orientation

VISUS SUGGESTED ACTIONS

SAFETY UPGRADING ACTIONS

EXTERNAL INTERVENTIONS

UPGRADED SITUATION

LEGEND: External equipment, Accessory interventions, Safety interventions, External interventions

RESOURCES

BUDGET ALLOCATION

UPGRADING FINANCIAL COMMITMENT

INDEX: 0.72

CLASS

ESTIMATED RANGE: 83-101 K\$



Prof. Stefano Grimaz - University of Udine (Italy)
Jair Torres - UNESCO HQ

VISUS: A SUPPORT FOR DECISION MAKERS

ID	SCHOOL CHARACTERISTICS	STATUS	VISUS MULTI-HAZARD ASSESSMENT	SAFETY UPGRADING ACTIONS	BUDGET ALLOCATION
ID 20211XXX 20211 KAPPA 03 BENDU Jawa Barat Jl. Raya Cigugur 403.449 PRIMARY SCHOOL	SCHOOL CHARACTERISTICS SCHOOLYARD AREA: 1725 m ² MAIN BUILDINGS: 600 m ² ANCILLARY BUILDINGS: 75 m ² CLASSROOMS: 6 PEOPLE IN THE SCHOOL: 98	STATUS NOT ACCESSIBLE POOR BASIC BASIC POOR UNLIMITED ACCESS	VISUS MULTI-HAZARD ASSESSMENT LOCATION TECHNOLOGIES MAIN BUILDINGS ANCILLARY BUILDINGS 2 stars	SAFETY UPGRADING ACTIONS NO ACTIONS REQUIRED LIGHT INTERVENTIONS 0% BUILDING AREA 100% UPGRADED SITUATION	BUDGET ALLOCATION UPGRADED FINANCIAL COMMITMENT INDEX: 0.48 CLASS ESTIMATED RANGE: 54-56 K\$
ID 20219XXX 20219 KAPPA 010 BANGUNG Jawa Barat Jl. Sekeloa-keloa (Kampung Bandoeng), Cidolog, Bage VOCATIONAL	SCHOOL CHARACTERISTICS SCHOOLYARD AREA: 43000 m ² MAIN BUILDINGS: 27832 m ² ANCILLARY BUILDINGS: 0 m ² CLASSROOMS: 94 PEOPLE IN THE SCHOOL: 2534	STATUS NOT ACCESSIBLE POOR GOOD BASIC POOR CONTROLLED ACCESS	VISUS MULTI-HAZARD ASSESSMENT LOCATION TECHNOLOGIES MAIN BUILDINGS ANCILLARY BUILDINGS 2 stars	SAFETY UPGRADING ACTIONS EXTERNAL INTERVENTIONS LIGHT INTERVENTIONS 0% BUILDING AREA 100% UPGRADED SITUATION	BUDGET ALLOCATION UPGRADED FINANCIAL COMMITMENT INDEX: 0.46 CLASS ESTIMATED RANGE: 2003-2448 K\$
ID 20219XXX 20219 KAPPA 020 BANGUNG Jawa Barat Gedung sekoleng smpk no. 17, sekoleng kolong bangung no 154 UPPER SECONDARY SCHOOL	SCHOOL CHARACTERISTICS SCHOOLYARD AREA: 11297 m ² MAIN BUILDINGS: 3387 m ² ANCILLARY BUILDINGS: 150 m ² CLASSROOMS: 34 PEOPLE IN THE SCHOOL: 1449	STATUS NOT ACCESSIBLE POOR GOOD BASIC BASIC LIMITED ACCESS	VISUS MULTI-HAZARD ASSESSMENT LOCATION TECHNOLOGIES MAIN BUILDINGS ANCILLARY BUILDINGS 3 stars	SAFETY UPGRADING ACTIONS NO ACTIONS REQUIRED LIGHT INTERVENTIONS 0% BUILDING AREA 100% UPGRADED SITUATION	BUDGET ALLOCATION UPGRADED FINANCIAL COMMITMENT INDEX: 0.21 CLASS ESTIMATED RANGE: 116-142 K\$
ID 20219XXX 20219 KAPPA 0140 BANGUNG Jawa Barat Jl. Yogyakarta, A. Manan MIDDLE SCHOOL	SCHOOL CHARACTERISTICS SCHOOLYARD AREA: 5000 m ² MAIN BUILDINGS: 3700 m ² ANCILLARY BUILDINGS: 100 m ² CLASSROOMS: 23 PEOPLE IN THE SCHOOL: 1288	STATUS NOT ACCESSIBLE POOR GOOD BASIC BASIC CONTROLLED ACCESS	VISUS MULTI-HAZARD ASSESSMENT LOCATION TECHNOLOGIES MAIN BUILDINGS ANCILLARY BUILDINGS 1 star	SAFETY UPGRADING ACTIONS NO ACTIONS REQUIRED LIGHT INTERVENTIONS 0% BUILDING AREA 100% UPGRADED SITUATION	BUDGET ALLOCATION UPGRADED FINANCIAL COMMITMENT INDEX: 0.68 CLASS ESTIMATED RANGE: 404-494 K\$
ID 20219XXX 20219 KAPPA 010 LAL West Java Gedung sekoleng smpk no. 17, sekoleng kolong bangung no 154 MIDDLE SCHOOL	SCHOOL CHARACTERISTICS SCHOOLYARD AREA: 3000 m ² MAIN BUILDINGS: 1274 m ² ANCILLARY BUILDINGS: 8 m ² CLASSROOMS: 11 PEOPLE IN THE SCHOOL: 653	STATUS NOT ACCESSIBLE POOR GOOD BASIC POOR CONTROLLED ACCESS	VISUS MULTI-HAZARD ASSESSMENT LOCATION TECHNOLOGIES MAIN BUILDINGS ANCILLARY BUILDINGS 2 stars	SAFETY UPGRADING ACTIONS EXTERNAL INTERVENTIONS LIGHT INTERVENTIONS 0% BUILDING AREA 100% UPGRADED SITUATION	BUDGET ALLOCATION UPGRADED FINANCIAL COMMITMENT INDEX: 0.52 CLASS ESTIMATED RANGE: 104-127 K\$



PILOT PROJECT
VERSION

INDONESIA Pilot Project
Collective report

DRAFT VERSION		Indonesia Pilot Project Collective report - Legend			
School characteristics					
Tag	Name	Tag	Name	Tag	Name
	School complex		Permanent main or ancillary buildings		School size: small
	Location		Semi-permanent main or ancillary buildings		School size: medium
	Schoolyard		Non permanent main or ancillary buildings		School size: large
	Main buildings		Classrooms		
	Ancillary buildings		People in the school (male and female)		
Status					
Tag	Name	Tag	Name	Tag	Name
	Accessibility		Maintenance		Comfort
	Water & sanitation		Content / equipment		Security

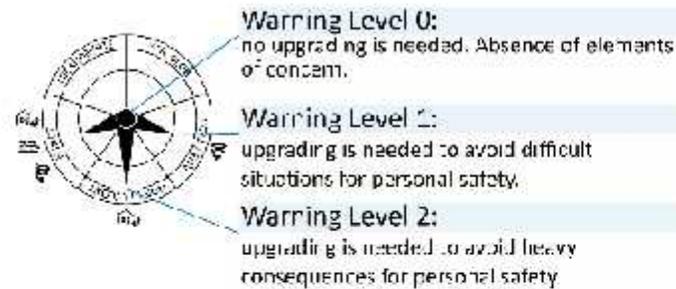
ID 20219502	SCHOOL CHARACTERISTICS		STATUS	
SMP NASIONAL	SCHOOLYARD AREA		3000 m ²	PARTIALLY ACCESSIBLE
West Java	MAIN BUILDINGS		637 m ²	POOR
Sadang serang street, no. 17, sekeloa, coblong, bandung, 40134	ANCILLARY BUILDINGS		8 m ²	GOOD
MIDDLE SCHOOL	CLASSROOMS		11	BASIC
	PEOPLE IN THE SCHOOL		653	POOR
			SIZE	CONTROLLED ACCESS

VISUS multi-hazard assessment

Safety warnings

Tag	Name
	Safety warning
	Absence of concerns for personal safety
	Potentially difficult situations for personal safety
	Potentially heavy consequences for personal safety

Warning rose



Tag	Name
	Ordinary
	Fire
	Flood
	Earthquake
	Wind

Multi-hazard VISUS safety stars



Distribution of the VISUS safety stars for the different hazards



VISUS safety stars - criteria of assignment

- Unsuitable site (Level 2 of concern for site)
- Suitable site (absence of Level 2 of concern for site)
- Stability of the building (absence of Level 2 of concern for structural global)
- Life safeguard (absence of Level 2 of concern for all issues)
- Rapid resume of operations (absence of Level 1 of concern for structural global and local)
- Immediately operational (absence of Level 1 of concern for all issues)

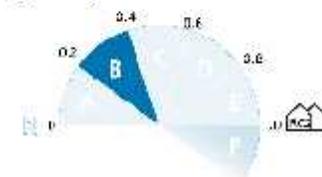
VISUS MULTI-HAZARD ASSESSMENT



Safety upgrading actions

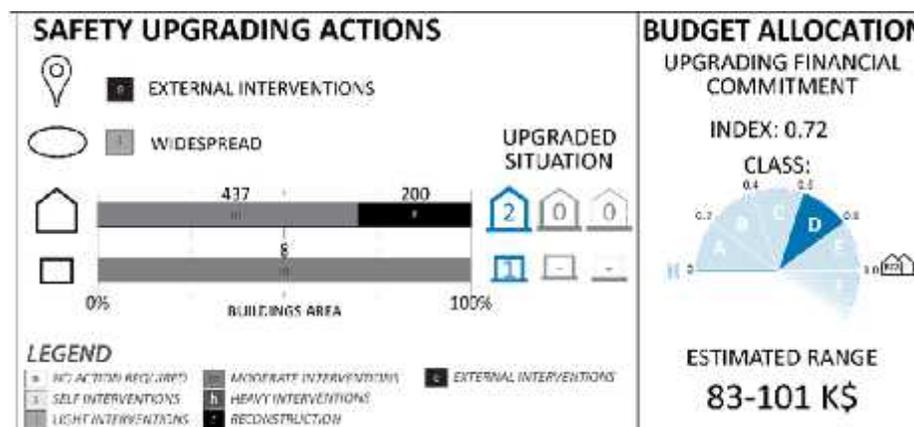
Color	Name	Description
	No action required	No action required
	Self interventions	School personnel can make the required safety interventions.
	Light interventions	Local artisans or small construction companies can realize the interventions, with the installation of a small construction site. Most of the building is usable during the interventions.
	Moderate interventions	The interventions are larger and wider than in the case of "minor interventions", but not yet heavy interventions.
	Heavy interventions	The interventions should be realized by a construction company, with a large construction site. The building is not usable during the interventions.
	Reconstruction	The required interventions suggest that it is convenient to demolish and reconstruct the building.
	External interventions	The required interventions involve the context of the school complex.

Class for the Upgrading Financial Commitment (UFC)



No Interventions (UFC index null)

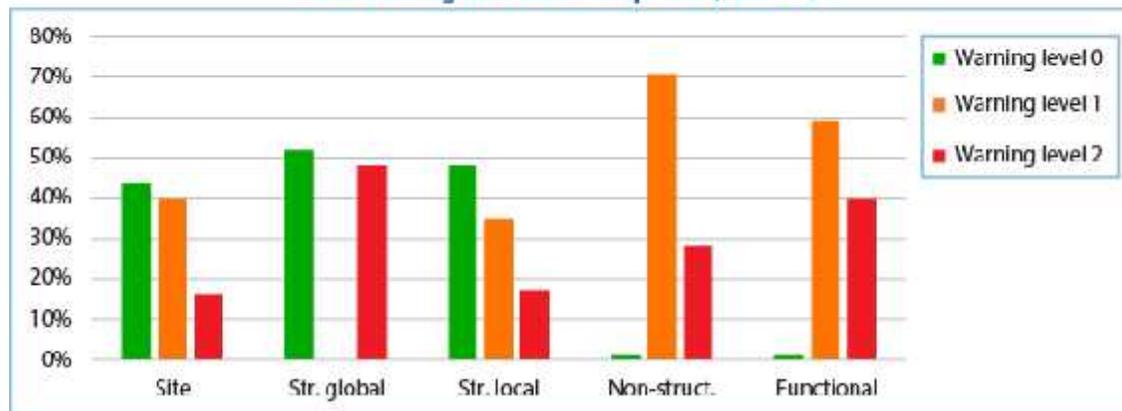
Complete reconstruction of the school complex





School complex (100 S.C.)

Distribution (%) of warning levels considering the school complexes (100 S.C.)



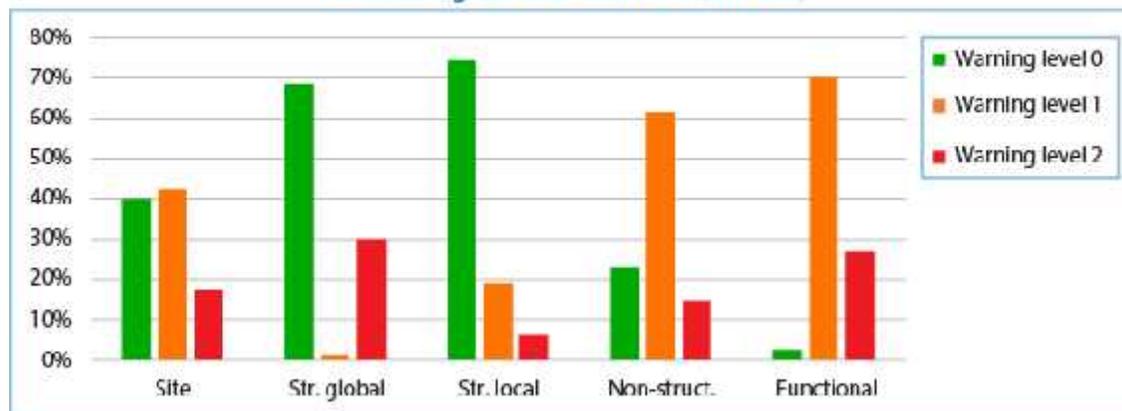
Distribution (%) of safety stars considering the School Complexes (100 S.C.)



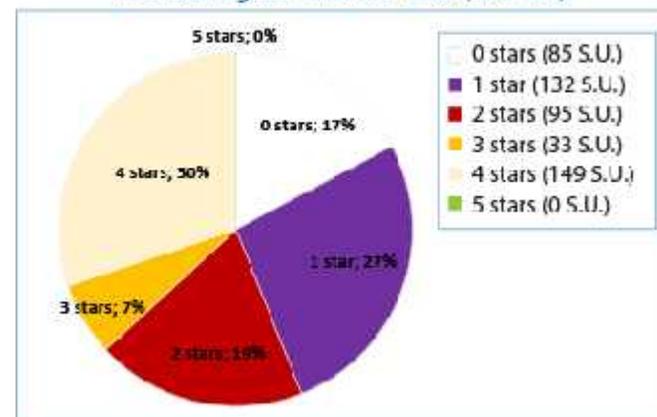
74% UNDER life safeguard performance

Structural units (494 S.U.)

Distribution (%) of warning levels considering the Structural Units (494 S.U.)



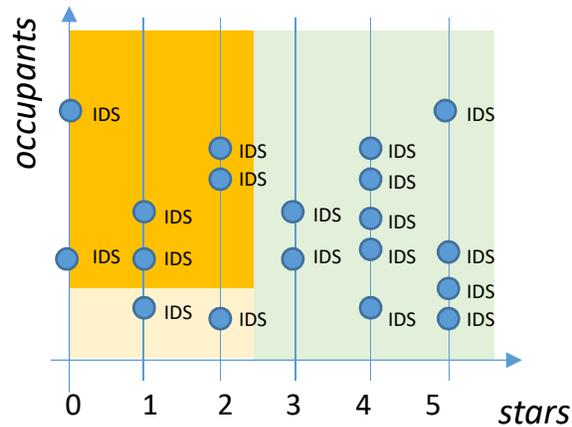
Distribution (%) of safety stars considering the Structural Units (100 S.U.)



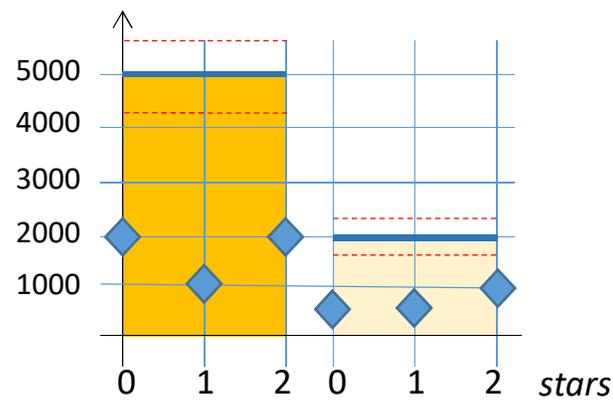
63% UNDER life safeguard performance



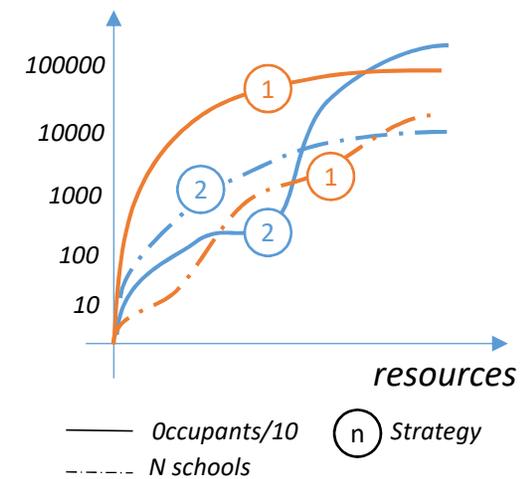
Prioritization for planning



Upgrading budget allocation

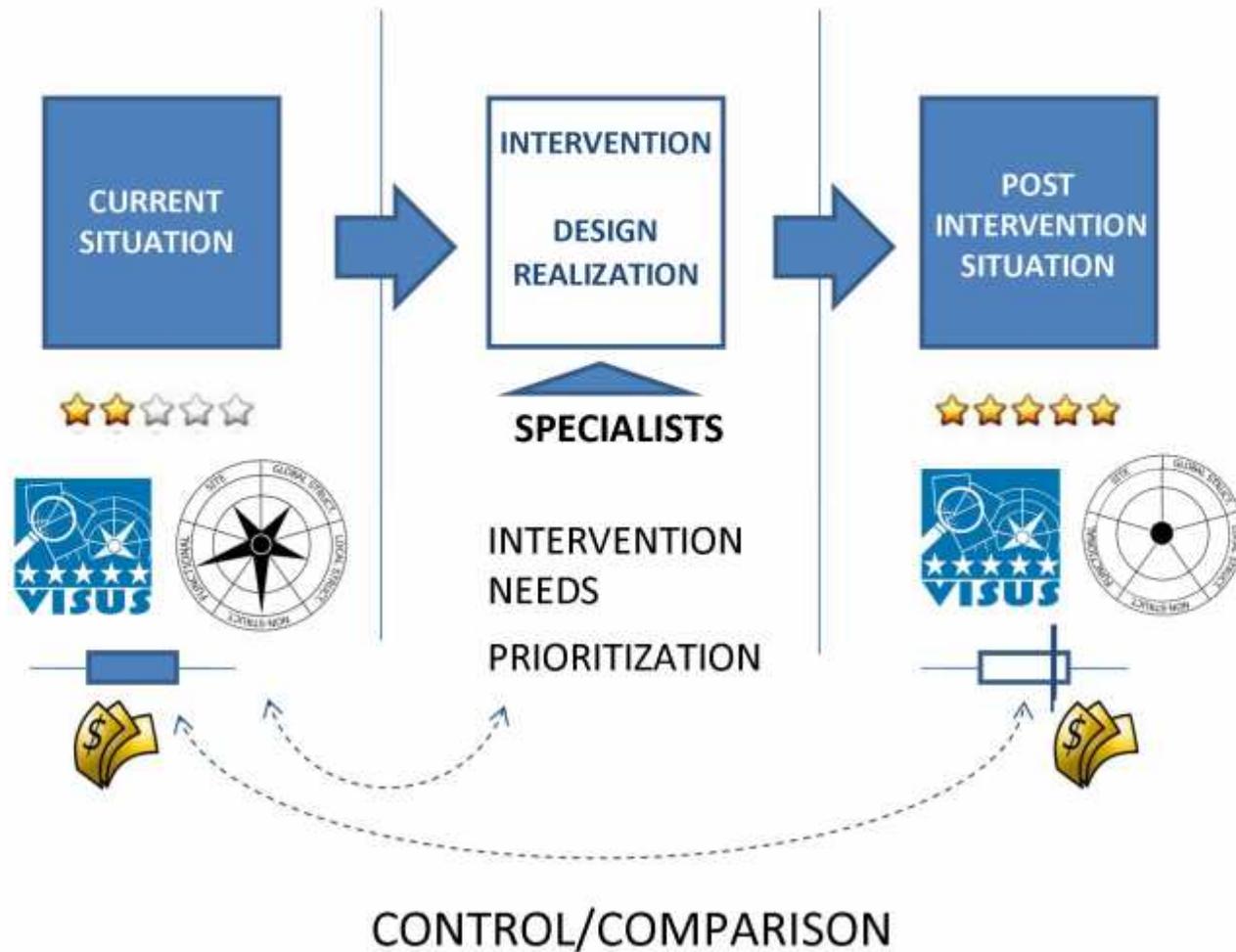


Strategies





VISUS: A TOOL FOR INDIVIDUATING, MANAGING AND CONTROLLING THE PROCESS OF ACTIONS OF RISK MITIGATION





VISUS POST-DISASTER



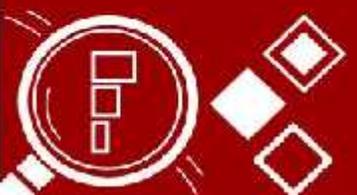
- After Hurricane Irma
- 3-day mission to Barbuda on 2-4 October 2017
- 2 trained experts from the Italian Fire Corps
- 51 sites assessed
- Part of the Post Disaster Needs Assessment
- In collaboration with UNESCO Kingston Office



UNESCO
UNIVERSITY OF UGENT
UNIVERSITY OF SOUTHERN CALIFORNIA
SPRINT

Mission Anticilia - Barbuda 2017 /
Post Disaster Needs Assessment

VISUS Post Disaster Triage
FINAL REPORT



VISUS
POST-DISASTER

THANK YOU!



Looking forward
to receive your comments



United Nations
Educational, Scientific and
Cultural Organization

Mr. Jair Torres

Disaster Risk Reduction and Resilience

Earth Sciences and Geo-hazards Risk Reduction

Natural Science Sector

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