LEAP-RE

Long-Term Joint EU-AU Research and Innovation Partnership on Renewable Energy

WP3
Pillar 2 Scientific Coordination

Deliverable D3.2

Measure undertaken in WP9-WP16 to control health or environment issues potentially caused by the research

www.leap-re.eu

This project has received funding from the European Commission's Horizon 2020 Research and Innovation Programme. The content in this presentation reflects only the author(s)'s views. The European Commission is not responsible for any use that may be made of the information it contains.

Table of Content

1. Introduction

The aim of D3.2 is to provide Pillar 2 with a framework to undertake measures in WP9-WP16 to control health or environmental issues potentially caused by the research activities. The deliverable was introduced by the Coordinator LGI at the time of the LEAP-RE proposal submission.

At the current stage, eight out of eight WPs follow their institution's guidelines for limiting and preventing environmental or safety impacts that may occur in the workplace during project execution.

It must be noted that multiple European partners will not conduct on-field surveys or on-site visits. Many of the activities on site will be conducted by African partners within each WP. From the interview, all the academia partners will follow the guidelines of their own institution.

2. Disclaimer

It's important to underline that for the responsibility of risks assessment oversees the institutions where the research is conducted. Any risks potentially associated to the research need therefore to

- Comply with the Research center /academia regulation
- Be formally included in the organizational structure of the Research Center/Academia
- Comply with the National or overarching rule of laws associated to risk assessment

For the abovementioned reasons, the document here presented is intended only as a schematic and graphical guideline in case some of the LEAP-RE partners may not have a Research Risk Assessment procedure in place, yet.

This deliverable does not provide a legal binding document. Each Partner acts in the frame of the Grant Agreement signed within the LEAP-RE consortium.

3. The Risks assessment process for research activities

3.1. Risk assessment responsibility

The WP leaders within Pillar 2 need to take responsibility for all research risk assessments associated to their projects assuring they comply with the:

- their institutional regulations,
- specific national local law
- the LEAP-RE Grant Agreement

Risk assessors need to be competent and in case provided by the home institutions of the WP leaders that are managing the specific research.

3.2. Risk assessment process

The risk assessment process is a careful examination of what could cause harm, who/what could be harmed and how. It will help you to determine what risk control measures are needed and whether you are doing enough.

The risks may be specialist in nature or general. Information can be found from legislation, sector guidance, safety data sheets, manufacturers equipment information, research documents, forums and health and safety professionals.

A useful check list is below presented. Please,

- Be sure capabilities, knowledge, skills, and experience of the project team members is well assessed since practical research might involve less well-known hazards
- Be informed if your research needs a dynamic risk assessment and these are recorder
- Provide the right personal protective equipment for the hazards identified and train the team
- Identify and Undertake Specific Occupational Health vaccinations, health surveillance and screening requirements.
- Do not forget potential risk from associated activities: storage, transport/travel, cleaning, maintenance, foreseeable emergencies (e.g., spillages), decommissioning and disposal.
- Include a safe design, testing and maintenance of the facilities and equipment used within the research

A list of templates and their general drafting are provided in the annexes

3.3. Research risks

According to the guidelines by the EU Typical risks that need to be considered as part of research ethics are:

Social risks: disclosures that could affect participants standing in the community, in their family, and their job.

Legal risks: activities that could result in the participant, researchers and / or University committing an offence; activities that might lead to a participant disclosing criminal activity to a researcher which would necessitate reporting to enforcement authorities; activities that could result in a civil claim for compensation.

Economic harm: financial harm to participant, researcher and / or University through disclosure or another event.

Reputational risk: damage to public perception of University or the University/researchers' reputation in the eyes of funders, the research community and / or the public.

Safeguarding risks: Risk to young people, vulnerable adults and / or researcher from improper behavior, abuse, or exploitation. Risk to researcher of being in a comprising situation, in which there might be accusations of improper behavior.

Health and safety risks: risks of harm to health, physical injury or psychological harm to participants or the researcher. Further information on health and safety risks is given below.

In some cases, the research may need ethical approval if there is significant risk to participants, researchers, or the University.

3.4. A focus on Health and safety risks

Common research hazards and risks are:

Location hazards and risks are associated with where the research is carried out. For example: fire; visiting or working in participant's homes; working in remote locations and in high crime areas; overseas travel; hot, cold, or extreme weather conditions; working on or by water. Also, hazardous work locations, such as construction sites, confined spaces, roofs, or laboratories. For overseas travel, you will need to check country / city specific information, travel health requirements and consider emergency arrangements as part of your research planning, by following the University's overseas travel health and safety standard.

Activity hazards and risks associated with the tasks carried out. For example: potentially mentally harmful activities; distressing and stressful work and content; driving; tripping or slipping; falling from height; physically demanding work; lifting, carrying, pushing, and pulling loads; nighttime and weekend working.

Machinery and equipment. For example: ergonomic hazards, including computer workstations and equipment; contact with electricity; contact with moving, rotating, ejecting, or cutting parts in machinery and instruments; accidental release of energy from machines and instruments.

Chemicals and other hazardous substances. The use, production, storage, waste, transportation and accidental release of chemicals and hazardous substances; flammable, dangerous and explosive substances; asphyxiating gases; allergens; biological agents, blood, and blood products. You'll need to gather information about the amount, frequency and duration of exposure and carry out a COSHH or DSEAR assessment which will inform whether you may need health surveillance for yourself and / or your research participants.

Physical agents. For example: excessive noise exposure, hand-arm vibration, and whole-body vibration; ionizing radiation; lasers; artificial optical radiation and electromagnetic fields. You'll need to gather information about the amount, frequency and duration of exposure inform whether you may need health surveillance for yourself and / or your research participants.

3.5. Risks from DWPs

Table 1 shows the WPs projects risks concerning health and environmental issues, as reported in the DWPs. Risk description is provided, as well as the mitigation actions to tackle it (P=preventive actions / C=contingency actions). Besides, to each risk is associated its corresponding WP, its category according to the classification provided in Section 3.4, probability (1=low; 5=high) that the risk occurs and the impact (1=low; 5=high) if the risk occurs.

Table 1

Risk description	Risk mitigation	WP	Category	Probability	Impact
Uncertainties linked to COVID pandemic, impact on collaboration modes	(P) The risk and impact will be monitored from the LEAP-RE perspective including during proposal evaluation (P) Use of virtual meetings (C) The programme is set to start in Apr. 2021	9	Location hazard	5	3
/	/	10	/	/	/
Local health risks (malaria, dengue, sunstroke...)	Easily contained by prevention and protection measures	11	Location hazard	2	2
Impact on the mode, distribution and	(P) Virtual workshops and training. Appropriate planning of the actions	11	Location hazard	5	3

effectiveness of research mobility and capacity building actions due to COVID pandemic.	enforced by the co-leading of EU-AU partners				
/	/	12	/	/	/
/	/	13	/	/	/
Failure to conduct large gathering and data collection due to natural pandemics (COVID-19)	(P) Partners will contact small, targeted groups and well as post questionnaire.	14	Location hazard	2	4
Travel restriction due to the COVID pandemic	(P) Most meetings performed online. (C) Delay of field work and modification of the planning	15	Location hazard	4	2
Travel restriction due to the security situation	(P) Most meetings performed online. (C) Delay of field work and modification of the planning	15	Location hazard	3	3
/	/	16	/	/	/

3.6. How to carry out a risk assessment

The entity responsible for the research should provide standard on risk assessments provides guidance, tips on getting it right, as well as resources and the forms to help you produce suitable and sufficient risk assessments and must be used.

Risk assessments is a dynamic process that need to be carried out ex ante (before the research starts), in itinere (after the research has started), ex post once the research is closed including arrangements for waste disposal, equipment, controlled area decommission and emergencies.

Principal investigators and researchers are responsible for controlling the risks associated with their project. They ensure risk assessments are undertaken before research starts and review them regularly throughout the project. An example of flowchart that guide the risk assessment is presented in Figure 1.

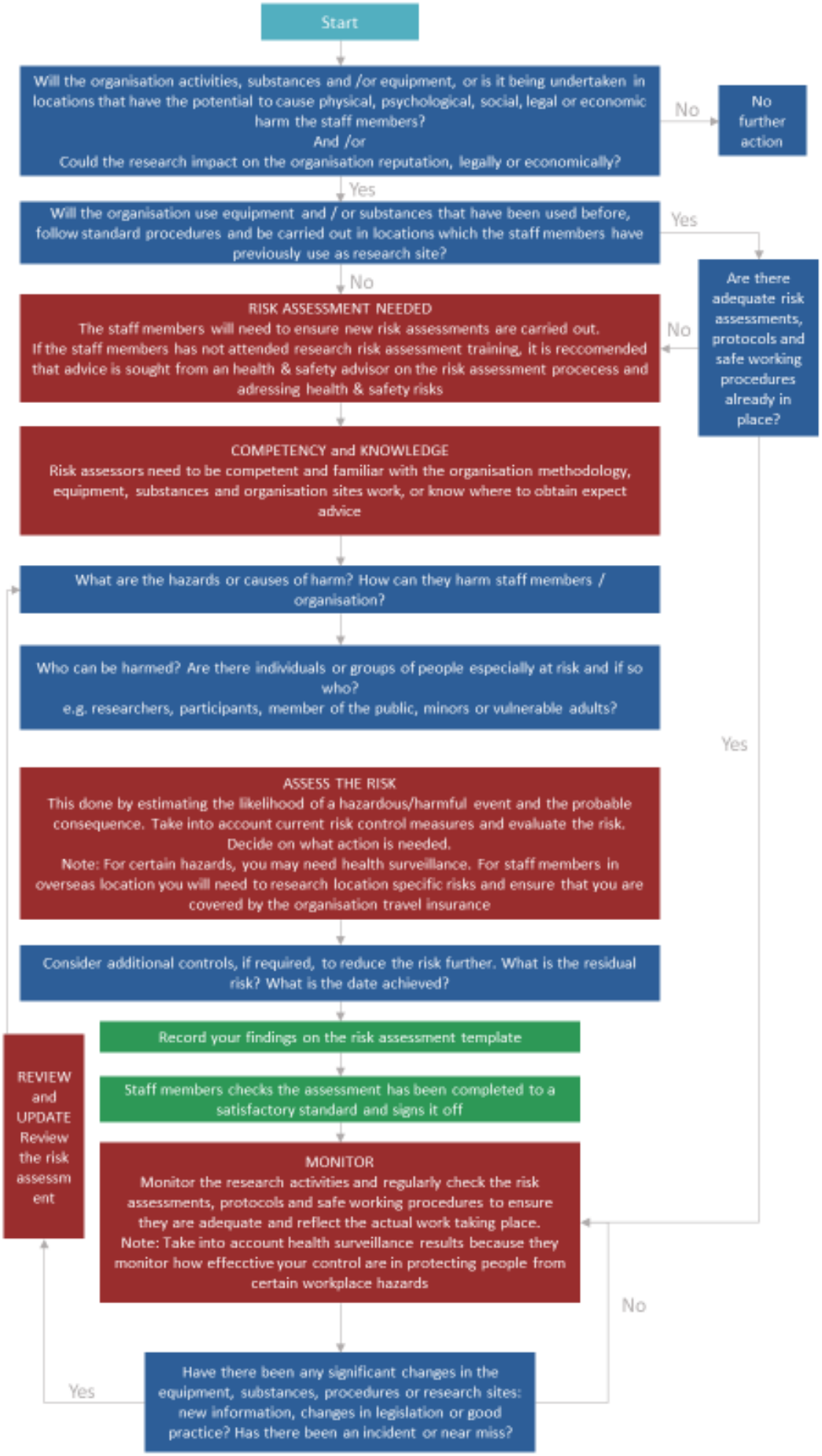
Start
Will the organisation activities, substances and /or equipment, or is it being undertaken in locations that have the potential to cause physical, psychological, social, legal or economic harm the staff members?
And /or
Could the research impact on the organisation reputation, legally or economically?
No
No further action
Yes
Will the organisation use equipment and / or substances that have been used before, follow standard procedures and be carried out in locations which the staff members have previously use as research site?
Yes
Are there adequate risk assessments, protocols and safe working procedures already in place?
No
RISK ASSESSMENT NEEDED
The staff members will need to ensure new risk assessments are carried out.
If the staff members has not attended research risk assessment training, it is reccomended that advice is sought from an health & safety advisor on the risk assessment procecess and adressing health & safety risks
COMPETENCY and KNOWLEDGE
Risk assessors need to be competent and familiar with the organisation methodology, equipment, substances and organisation sites work, or know where to obtain expect advice
What are the hazards or causes of harm? How can they harm staff members / organisation?
Who can be harmed? Are there individuals or groups of people especially at risk and if so who?
e.g. researchers, participants, member of the public, minors or vulnerable adults?
Yes
ASSESS THE RISK
This done by estimating the likelihood of a hazardous/harmful event and the probable consequence. Take into account current risk control measures and evaluate the risk.
Decide on what action is needed.
Note: For certain hazards, you may need health surveillance. For staff members in overseas location you will need to research location specific risks and ensure that you are covered by the organisation travel insurance
Consider additional controls, if required, to reduce the risk further. What is the residual risk? What is the date achieved?
Record your findings on the risk assessment template
Staff members checks the assessment has been completed to a satisfactory standard and signs it off
MONITOR
Monitor the research activities and regularly check the risk assessments, protocols and safe working procedures to ensure they are adequate and reflect the actual work taking place.
Note: Take into account health surveillance results because they monitor how effecctive your control are in protecting people from certain workplace hazards
REVIEW and UPDATE Review the risk assessm ent
No
Yes
Have there been any significant changes in the equipment, substances, procedures or research sites: new information, changes in legislation or good practice? Has there been an incident or near miss?

Figure 1: Risk assessment flow chart

4. Templates

In this section the templates for the risk estimation tools and risk assessment are reported and some examples are shown.

4.1. Risk Estimation Tools

Assessing likelihood of event

Likelihood score				
Very unlikely	Unlikely	Fairly likely	Likely	Very likely

Assessing consequence

Consequence / Impact	General risk description	Physical / mental harm description
Insignificant	Annoyance but does not disrupt service: Financial loss to institution under €...; Isolated service user complaints contained within unit/section; Litigation claim or fine less than €...; Failure to achieve a core research objective	No significant harm to health. Minor injuries not requiring first aid
Minor	Minor impact on service; Minor injuries to several people; Financial loss in excess of €... but less than €...; Isolated service user complaints contained within department; Litigation claim or fine in excess of £5k but less than €...; Failure to achieve several research objectives including core objective	Nuisance and irritation; Temporary ill-health leading to discomfort, stress/distress; Minor injuries requiring first air; Special injuries, minor cuts or bruises: eye irritation from dust
Moderate	Service disruption; Financial loss in excess of €... but less than €...; Adverse local media coverage; Lots of service complaints; Litigation claims or fine in excess of €... but less than €...; Failure to achieve one or more strategic plan objective/s	Short term sickness absence, dermatitis; Asthmas; Work-related upper limb disorders; Diagnosable mental health condition (e.g. post-traumatic stress); Injury resulting in person incapacitated or absent from work for less than 7 days; Laceration: minor burns; Sprains

Major	Significant service disruption; Financial loss in excess of €... but less than £5million; Adverse national media coverage; Litigation claim or fine in excess of €... but less than €...; Failure to achieve one or more strategic plan objective/s	III – health leading to permanent minor disability; Partial hearing lost; Long term sickness absence (7+ days); Diagnosable mental health condition significantly affecting day to day life; Self-harm or harm to others due to mental health condition; Incapacitated or absent from work for more than 7+ days; Laceration: burns; concussion; serious sprains; minor fractures
Catastrophic	Total service loss for a significant period; Financial loss in excess of €...; National publicity more than 3 days; Possible resignation of leading member or chief officer; Multiple civil or criminal suits; Litigation claim or fine above €...; Failure to achieve major corporate objective in the Strategic Plan	Acute fatal diseases; Sever file shortening diseases; Permanent substantial disability (life changing); III – health retirement; Suicide or serious harm to others due to mental ill health; Fatal injuries: permanent substantial physical disability (life changing); Amputations: Multiple serious injuries; Serious burns: loss of sight, major fractures; Loss of consciousness caused by head injury; Inhalation of substance or asphyxia

4.2. Risk Assessment Template

Risk assessment	**File name:**			
	Risk assessment reference		**Version number:**	

Describing of activity / area being assessed		**Location**	
Manager responsible		**Signature & date**	
Assessed by (name & role)		**Signature & assessment date**	

Hazard (H) hazardous event (HE) consequence (C)	Who might be harmed	Current controls	Current risk LxC= R	Additional controls needed to reduce risk	Residual risk LxC= R	Target date	Date achieved

Periodic review:

Review date:					
Review by:					
Signed:					

Likely consequence	Catastrophic	Medium	High	Very high	Very high	Very high
	Major	Low	Medium	High	High	Very high
	Moderate	Very low	Low	Medium	Medium	High
	Minor	Very low	Low	Low	Medium	Medium
	Insignificant	Very low	Very low	Low	Low	Low
		Very unlikely	Unlikely	Fairly likely	Likely	Very likely
		Likelihood of identified event /hazardous event occurring				