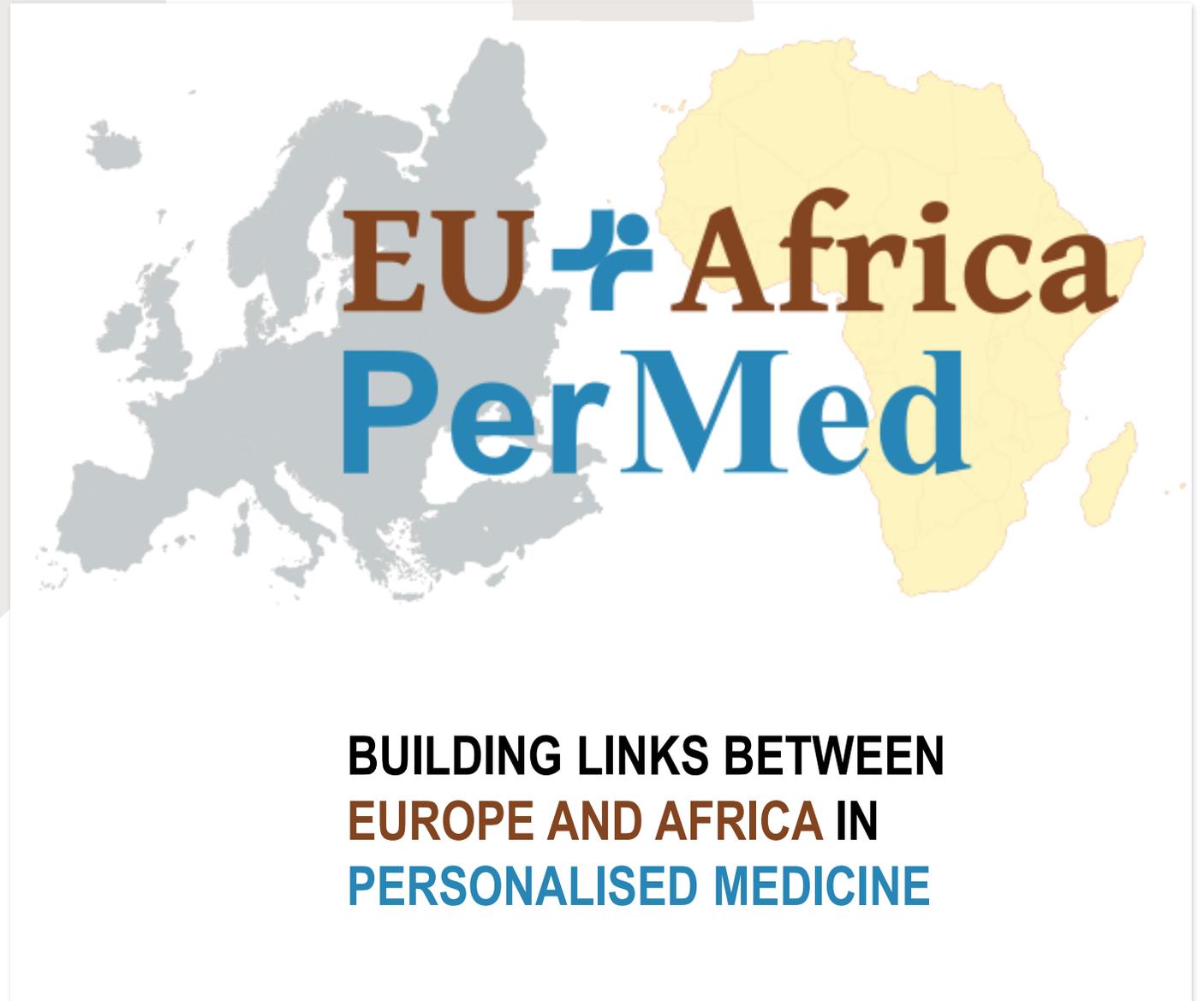


**EU-Africa PerMed Action
Plan: a roadmap for
facilitating, fostering and
promoting the collaboration
of Africa and Europe in
Personalised Medicine**

EU-Africa PerMed Webinar

20 January 2024



EU-Africa PerMed has received funding from the European Union's Horizon 2020 Research and Innovation programme under grant agreement No 964333

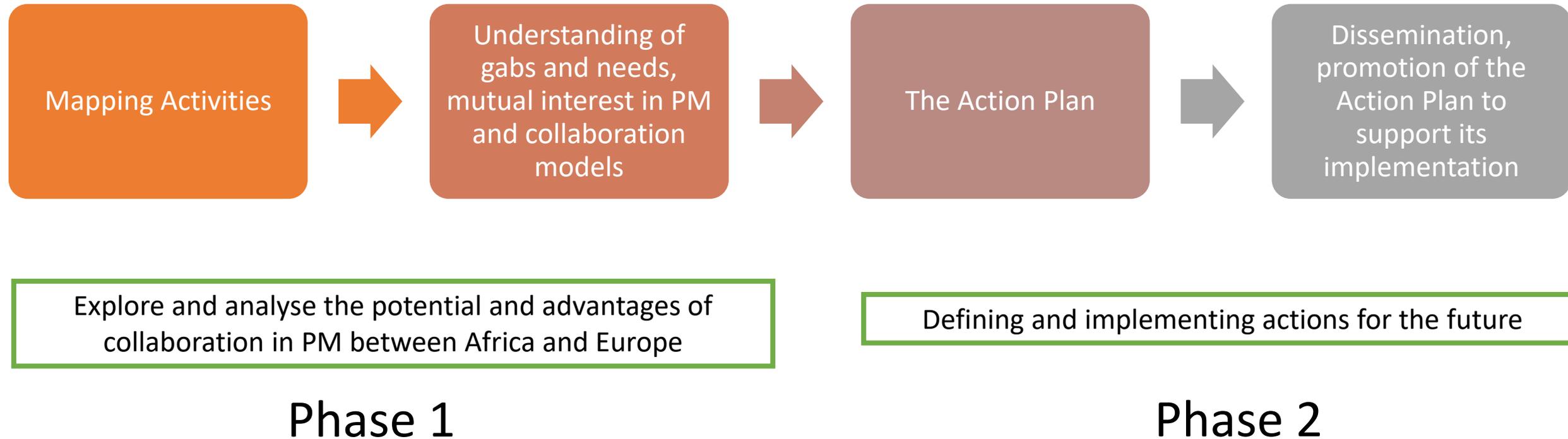
Personalised Medicine - a definition

*PM [] “refers to a medical model using
Characterisation of individuals’ phenotypes and genotypes
(e.g. **molecular profiling, medical imaging, lifestyle data**)
for tailoring the right **therapeutic** strategy for the right person at the right
time,
and/or to determine the **predisposition** to disease
and/or to deliver timely and targeted **prevention**”.*

According to: Horizon 2020 and

European Council Conclusions on personalised medicine for patients (2015/C 421/03)

The work towards the Action Plan



The work towards the Action Plan

African Regional Meetings

1st Stakeholder Workshop

Feb. 2022

Presentation of Mapping Results and collection of perception, challenges and opportunities of PM in Africa

Project results:

- D3.1 “List of African PM needs”
- D3.2 “List of areas of mutual interest between Europe and Africa”
- D3.3 “Report on gaps-and-needs assessment”

Mapping Activities



Understanding of gaps and needs, mutual interest in PM and collaboration models

Ref: Deliverable 2.1-Report: Mapping the scientific and policy landscape of PM in Africa. [Link to the document](#)

EU-Africa PerMed findings - Phase 1: Explore and analyse the potential and advantages of collaboration in PM between Africa and Europe:

D3.3 “Report on gaps-and-needs assessment”: focusses predominately on the African perspective with a gaps-and-needs assessment, setting the African needs (D3.1) in PM in the context of existing frameworks in and the current status of the African PM ecosystem. The regional approach served to structure the discussions with the stakeholders and therewith the development of D3.3 that reflects the regional analysis. EU-Africa PerMed has validated the results presented in D3.3 through the second stakeholder workshop organised in February 2023. **The project is working towards a peer reviewed publication of results presented in Deliverable 3.3.**

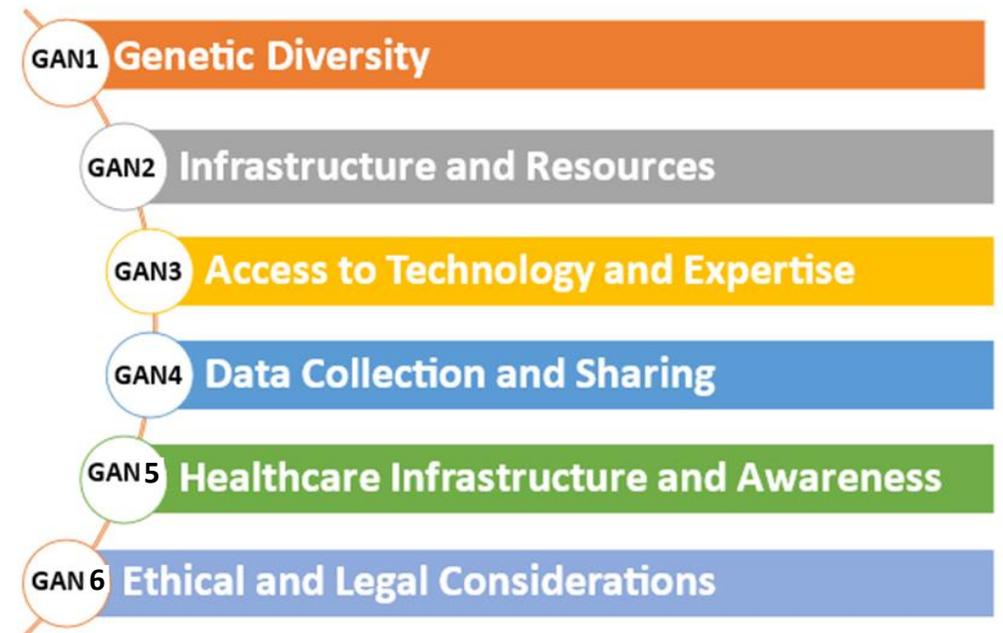
AFRICAN REGIONAL ANALYSIS

- SWOB Analysis - Strengths, Weaknesses, Opportunities and Barriers to Develop PM

AFRICAN CONTINENTAL GAPS & NEEDS ANALYSIS

- Gaps and Needs
- **Gaps-and-needs in the African personalised medicine system of health and topics proposed to be tackled by African-European collaboration as they are of mutual interest**

KEY ACTION AREAS



The work towards the Action Plan

African Regional Meetings

1st Stakeholder Workshop

Feb. 2022

Presentation of Mapping Results and collection of perception, challenges and opportunities of PM in Africa

2nd Stakeholder Workshop

Feb. 2023

Presentation of the gaps and needs identified and discussion on mutual interest and collaboration models

3rd Stakeholder Workshop

June 2024

Present the EU-Africa PerMed Action Plan, discuss and validate with relevant stakeholders the Actions proposed and next steps to be taken.

Mapping Activities



Understanding of gaps and needs, mutual interest in PM and collaboration models



The Action Plan



Dissemination, promotion of the Action Plan to support its implementation

The Action Plan



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The EU-Africa PerMed Action Plan

Develop recommendations for future collaborative actions in PM:

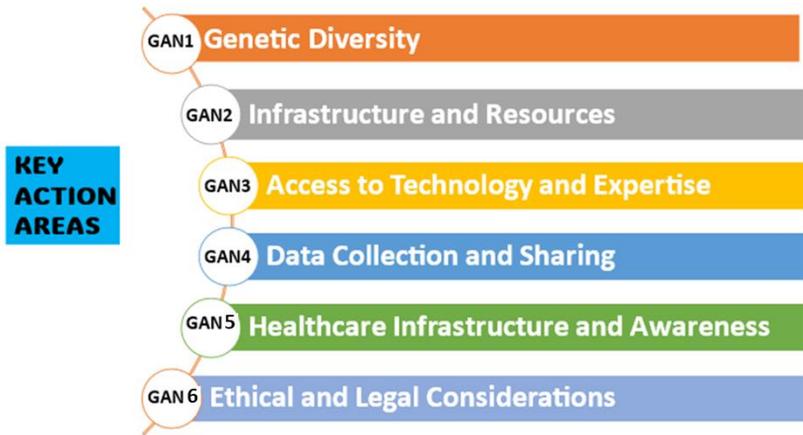
- To facilitate, foster and promote collaboration in PM between Africa and Europe.
- Concrete recommendations for actions at research and policy level.
- Activities that are of mutual interest for Africa and Europe.
- Recommendations for collaborative actions responding to common health challenges and needs identified through exchanges with African stakeholders, and consider the differences between African regions (Eastern, Western, Northern, Southern and Central Africa) and countries.

The Action Plan is addressed to all actors from Africa and Europe positioned to support the uptake and implementation of the presented recommendations: particularly policy makers (STI, health); national, international and global funders, from the public and private sector; the European Commission; the African Union; the WHO; already existing joint actions like the EDCTP; industry players; and also, to actors from academic and clinic contributing to the development and innovation of PM.

The EU-Africa PerMed Action Plan

- It does not outline extensively the general needs and requirements to develop and implement PM.
- Overall PM concept is already well described, e.g. through
 - the PerMed SRIA: ‘Shaping Europe’s Vision for Personalised Medicine’ (2015)
 - the Strategic Research and Innovation Agenda for Personalised Medicine (SRIA for PM, 2023).
- The building blocks to enable PM in a health system are similar, independent on the location of the country, hence comparable between Europe and Africa.

The EU-Africa PerMed Action Plan



The gaps and needs previously identified were transformed in concrete suggestions for South-South and South-North collaboration, including **26 distinct topics of collaboration formulated as**

- Research Actions,
- research supporting Actions.

<i>A (number)</i>	<i>Title</i>
Description	<i>Description of the Action</i>
Mutual African-European interest	<i>Outline of the mutual interest</i>
Mode of collaboration	<i>Description of the collaboration and suitable support</i>
Timing and objectives	<i>Expected outcome and impact over the time</i>

<i>A (number)</i>	<i>Title</i>
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Mode of collaboration	<i>Description of the collaboration and suitable support</i>
Timing and objectives	<i>Expected outcome and impact over the time</i>

The EU-Africa PerMed Action Plan

Part I “Personalised Medicine adopting environment” is focussing on the entire PM System of Health that considers all diseases or health conditions, and a broad range of technical and medical fields around diagnostics, treatment and prevention, as well as diverse stakeholders.

Table 1 : List of proposed actions for part 1 of the Action Plan “PM adopting environment”

1) Infrastructure, Education and Technology Awareness	
Research supporting actions	
A1	Biobank infrastructure/cohort network
A2	Strengthening bioinformatics in research infrastructure
A3	Capacity building of Personalised Medicine data generators and users
A4	African-European multi-centres focusing on healthcare education and awareness
A5	Education and training programme for public healthcare forces
A6	Education and awareness activity for patients' associations
A7	Twinning programme
Research actions	
A8	Population studies support stations
A9	International multidisciplinary research programme addressing Personalised Medicine
A10	Research collaboration revealing cancer diversity
A11	Research projects on companion diagnostic and biomarker discovery
A12	Research projects on the Big Three Infectious Diseases (BTIDs) and molecular-based tests
2) Ethical and Legal Considerations	
Research supporting actions	
A13	Training course for ethical committees focussing on ethical, legal and social aspects (ELSA) in Personalised Medicine research
3) Access to Technology and Expertise	
Research supporting actions	
A14	A personalised medicine advocacy programme or initiative
A15	African-European (International) Personalised Medicine Conference
A16	Regional Personalised Medicine consortia/Hubs
A17	Personalised Medicine Meta-Cluster
A18	EU-Africa PerMed 2
A19	African-European personalised medicine research-supporting network (AE PerMed)

The EU-Africa PerMed Action Plan

Part II “Genetics in Personalised Medicine” is presenting an example for a PM field with concrete actions related to this specific aspect, considering that Africa is the most genetically diverse continent with a wide range of ethnic groups and genetic variations but there is a lack of representation of African populations in global genetic studies and databases.

Table 2: List of proposed actions for part 2 of the Action Plan “Genetics and genomics in personalised medicine”

1) Human Genomic Networks	
Research supporting actions	
A20	National Genome Archive
A21	Establish regional genomic hubs
A22	Genomic data network
A23	Genomics for global health – African contribution
2) Genomic Research Networks, Hubs and Projects	
Research actions	
A24	Characterisation of regional genetic populations' architecture
A25	Africa-Europe network for human genomic research
A26	Genome-wide association (GWAS) study

An example - Research- supporting Action

A7 Twinning Programme

A7	Twinning Programme
Description	<p>The development of a twinning programme with a focus on PM applications to:</p> <ul style="list-style-type: none">• support knowledge exchange, mutual learning and collaboration of clinics between Africa and Europe• create a collaborative network of actors in the public and private medical sectors to discuss, develop and share new or refined tools and knowledge• showcase good examples in PM application• create an environment that connects researchers/clinicians across Europe and globally for knowledge exchange and exchanges of personnel.
Mutual African-European interest	<ul style="list-style-type: none">• Demonstrate efficiency of a method/technology or approach in different environments, e.g. in countries/hospitals in Africa and Europe• Reduce duplication of efforts and harmonisation of access to novel technologies – instead of starting the development of a PM approach in each clinic or country, the knowledge is transferred from one setting to the other (e.g. for exchanges between Africa and Europe). Within a region, e.g. in the African context, this could support the development of excellence centres accessible for more than one country (for very specific technology or expertise needed)• Implement and use new technologies: increase the market of new technologies outside of one continent• Develop expertise and facilitate knowledge sharing among different bodies/agencies in Africa and Europe.
Mode of collaboration	<p>African-European consortium with actors of different countries and both continents, which:</p> <ul style="list-style-type: none">• Is mainly driven by actors of the health sector as clinicians, academics and industry.• Should be supported financially to be able to meet and organise exchanges.• Is requested to exchange with policy organisations like regulatory agencies and ministries to improve government support in the long-term. <p>Alternatively: Already existing initiatives integrate the launching of Twinning Calls as activity.</p>
Timing and objectives	<p>Short-term objective: development of exchange programmes, e.g. through twinning calls to harmonise the understanding and sharing of knowledge (capacity building)</p> <p>Medium-term objective: larger pilots are started for knowledge transfer and transfer of practices from one centre to another</p> <p>Long-term objective: a highly connected clinical network and harmonised access to high-quality care and novel technology, facilitated resource sharing.</p>

An example - Research Action

A10 Research collaboration revealing cancer diversity

A10	Research Collaboration Revealing Cancer Diversity
Description	Multinational and intersectoral research project focusing on the detection of new genetic polymorphisms linked to cancer and considering different cancer characteristics such as localisation in the body or formation of metastases, as well as the impact of infectious diseases like human papilloma virus (HPV) and Epstein-Barr virus (EBV). The project should compare mutations that are known in Africa and Europe and correlate the results with geographic zones and environmental conditions.
Mutual African-European interest	<p>Understanding the differences in cancer epidemiology, aetiology and management between African and Europe creates important opportunities for generating new knowledge for accurate diagnosis and appropriate interventions. Discoveries made in Africa, due to its high genetic and environmental diversity, could be applicable to the rest of the world.</p> <p>Improved knowledge of loco-regional polymorphism of genes related to cancer represents an opportunity for new and innovative therapies. As a result of the science performed, targeted innovations are developed, and existing targeted therapies from Europe adapted to the African context (e.g. immunotherapy and neoadjuvant drugs). For Europe, collaborative research revealing cancer diversity results in better health coverage of people with a migration background living in Europe.</p> <p>For both continents, the outcome of the research feeds into improved prevention policies, hence, has great potential to reduce healthcare costs.</p>
Mode of collaboration	Transnational and intersectoral research projects with teams from Africa and Europe. Funding is provided through joint national funding from the participating countries, from funding programmes like EDCTP or directly from funders such as the AU/EU or global funders.
Timing and objectives	<p>Short-term objectives:</p> <ul style="list-style-type: none">• shared methodology (e.g. in a genomic network)• training courses and post-doc exchanges. <p>Medium-term objectives:</p> <ul style="list-style-type: none">• use of platforms and development of biobanks• big data and bio-informatics infrastructure establishment. <p>Long-term objective:</p> <ul style="list-style-type: none">• cohorts for research purposes will be constituted• diverse genetic and molecular factors associated with disease development are revealed.

Collaboration is the key

- PM is a topic with a clear global dimension for that cross-border and international collaboration is essential to enable the delivery of and access to precise diagnostics, therapies, and prevention strategies for all citizens around the world and within each country (SRIA for PM, 2023).
- Particularly for the infectious disease field it was demonstrated that international collaboration is essential, successful and efficient as diseases do not stop at borders.

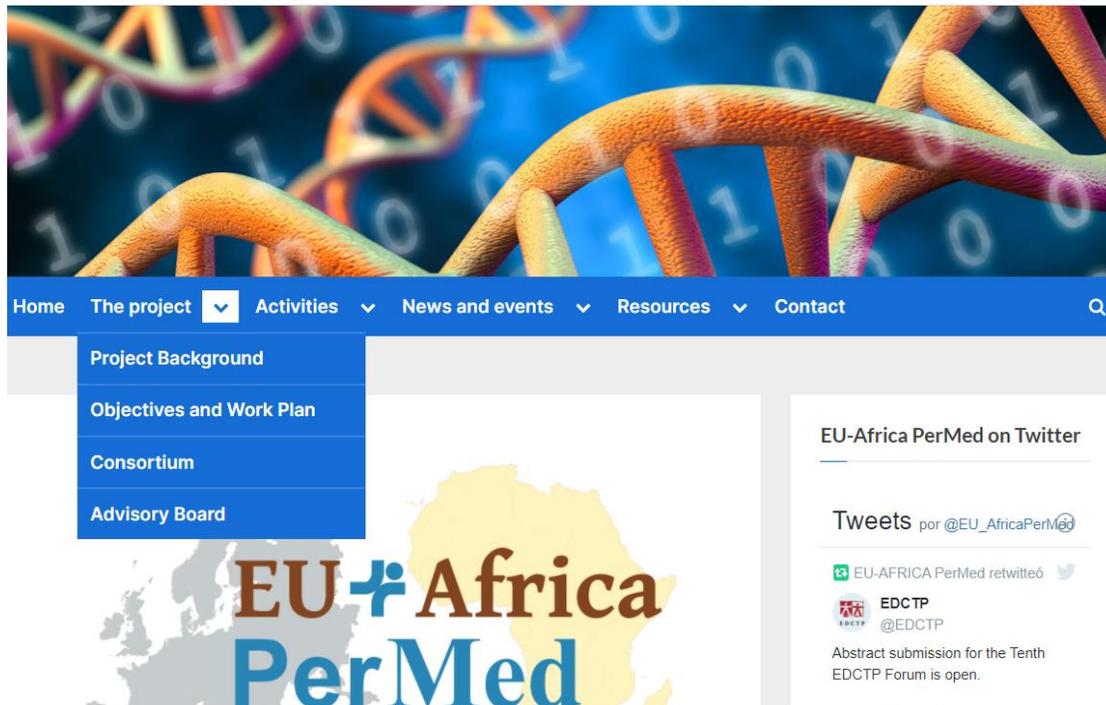
*If you want to go faster, go alone.
If you want to go far, go together.*
(African Proverb)

Final messages

- There is interest to develop PM or precision medicine in Africa
- Africa is ready for collaboration, but country differences are to be considered
- European stakeholders are interested to collaborate (equally) with Africa
- Europe can benefit from knowledge of African stakeholders/research
- Through collaboration with Africa, PM approaches are more broadly applicable
- African-European collaboration requires sustained funding and different models/tools for collaboration
- **The Action Plan is handed over to relevant stakeholders to support its further implementation**

Thank you for your attention

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