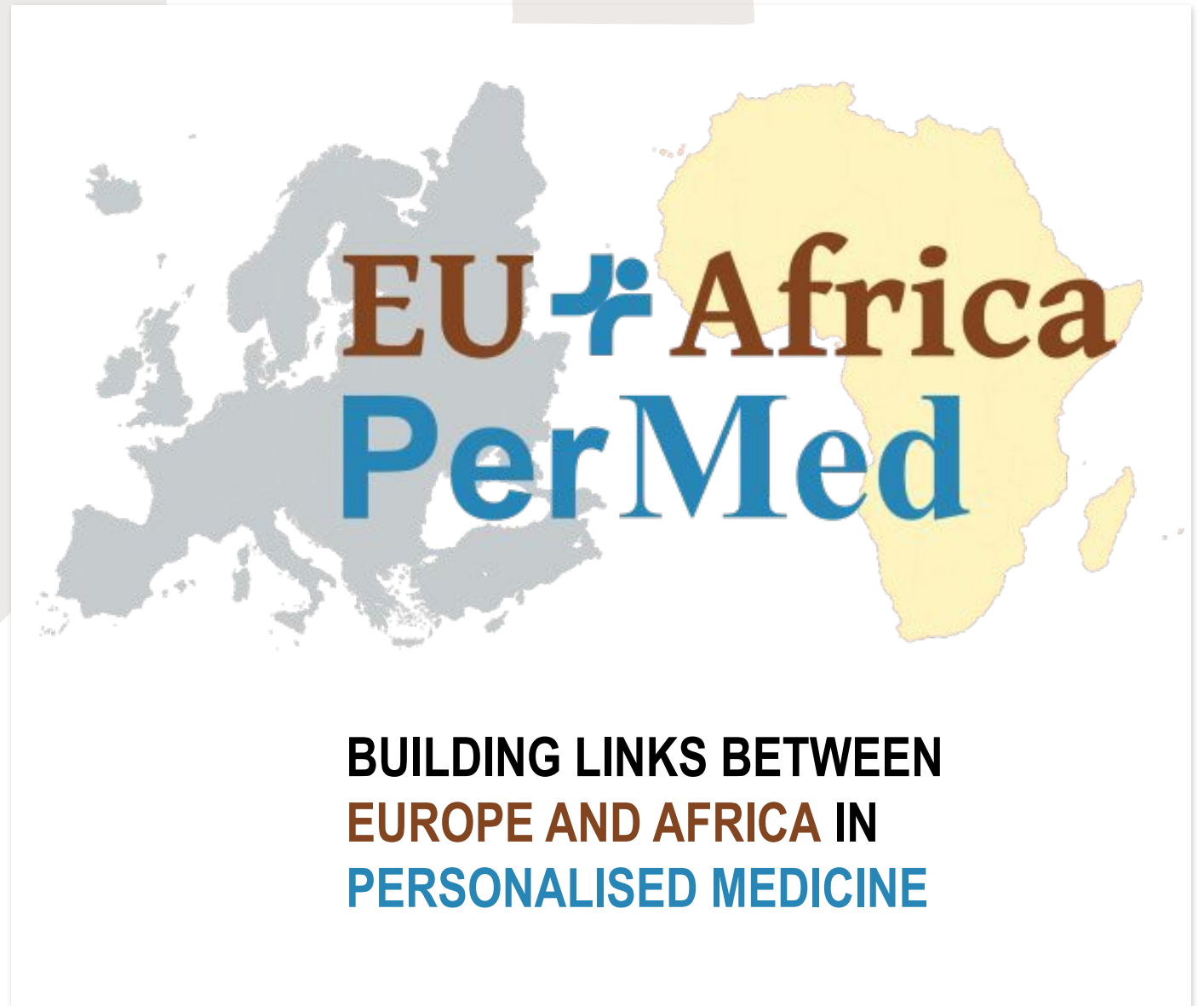# PM in East Africa- Findings from the EU-Africa PerMed scientific and policy mapping

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Presented by Lynette Kamau, APHRC

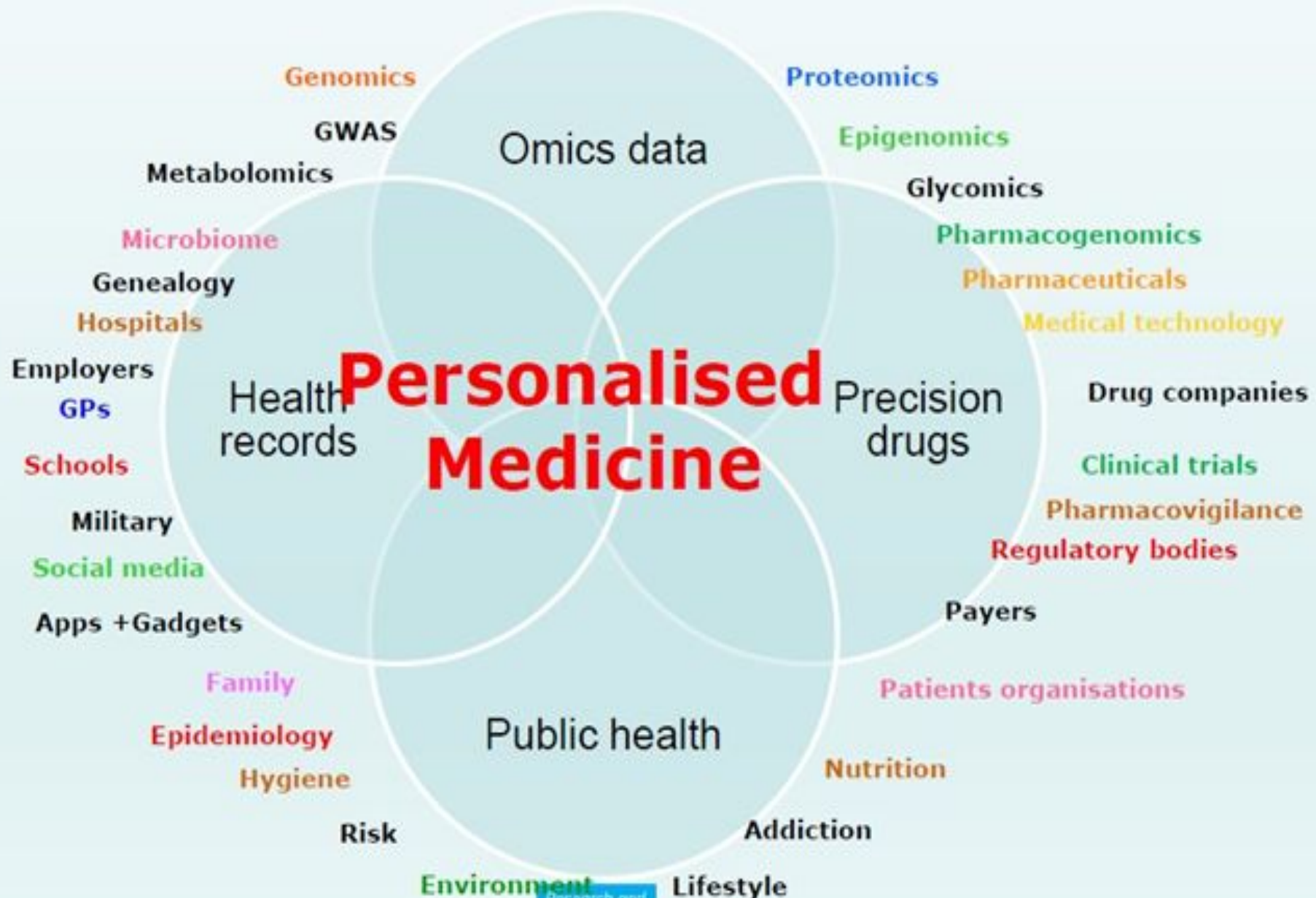**BUILDING LINKS BETWEEN EUROPE AND AFRICA IN PERSONALISED MEDICINE**

Outline

- The policy and scientific landscape
- Continental distribution of PM publication in Africa
- Opportunities for PM in Africa
- Recommendations to advance PM in Africa

The Context

According to the World Bank (2020), Africa's disease burden leads to over USD 800 billion in annual productivity loss. There is a need to explore new models and tools for managing the disease burden on the continent.

One such model: **Personalised Medicine** (PM), which refers to a medical model using the characterization of individuals' phenotypes and genotypes (e.g., molecular profiling, medical imaging, lifestyle data). This helps in tailoring the right therapeutic strategy for the right person at the right time, determining the predisposition to disease, and delivering timely and targeted prevention (European Commission, 2015).
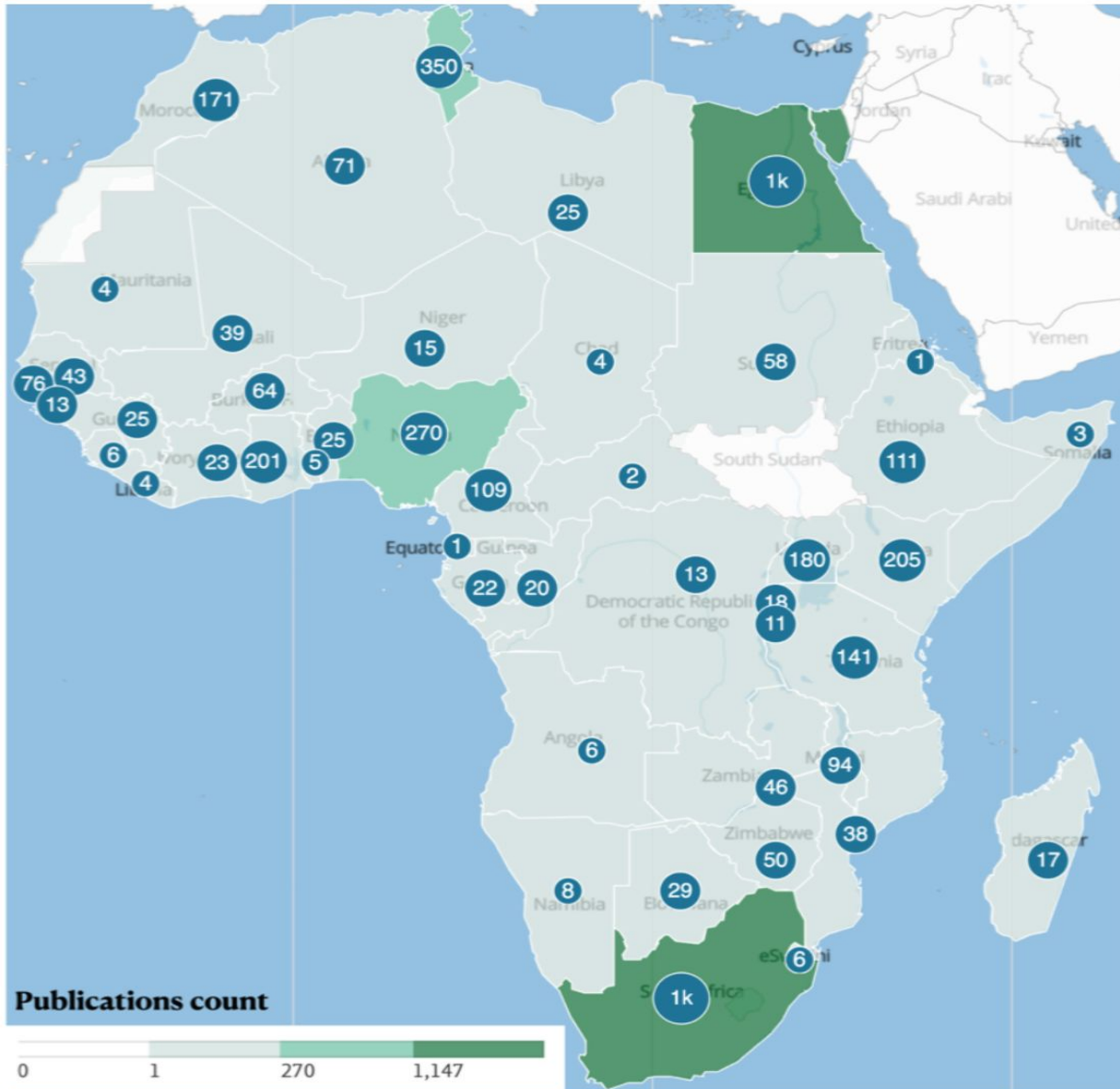
Policy and scientific mapping

In 2015, Ministries of Health in the WHO African region endorsed the *"Research for health: A strategy for the African region 2016-2025",* a common strategy focused on strengthening NHRS in African countries, as part of the policy goal of achieving Universal Health Coverage, a central target for reaching Health SDG3.

To facilitate monitoring and assessment of progress, the strategy established targets and priority interventions for strengthening the NHRS in four areas: i) **Governance, ii) Creating and sustaining resources; iii) producing and using research and iv) financing** (Kirigia JM 2015, Pang T, 2003).
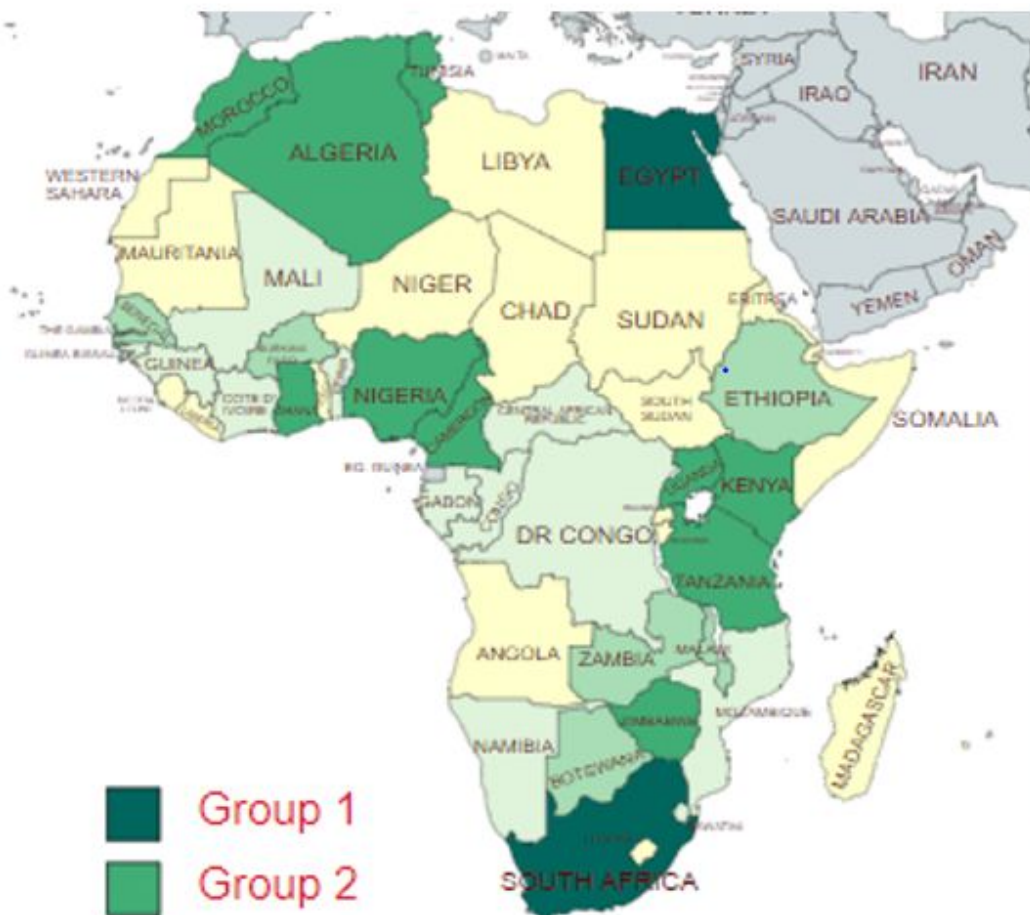
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Continental Distribution of Publications on PM

Country	Publications count
South Africa	1346
Egypt	1147
Tunisia	350
Nigeria	270
Kenya	205
Ghana	201
Uganda	180
Morocco	171
Tanzania	141
Ethiopia	111
Cameroon	109
Malawi	94
Gambia	76
Algeria	71
Burkina Faso	64
Sudan	58
Zimbabwe	50
Zambia	46
Senegal	43
Mali	39
Mozambique	38
Botswana	29
Benin	25
Guinea	25
Libyan Arab Jamahiriya	25
Côte d'Ivoire	23
Gabon	22
Congo	20
Mauritius	18
Rwanda	18
Madagascar	17
Niger	15
Democratic Republic Congo	13

Country	Publications count
Guinea-Bissau	13
Burundi	11
Namibia	8
Seychelles	7
Angola	6
Sierra Leone	6
Eswatini	6
Togo	5
Chad	4
Liberia	4
Mauritania	4
Somalia	3
Central African Republic	2
Cape Verde	1
Equatorial Guinea	1
Eritrea	1

Policy and scientific mapping

- There is limited research and information from the existing data on African populations for informed interventions and decision-making on PM.

- The mapping of PM's scientific and policy landscape in Africa gave the level of research for the different countries as reflected by publications. South Africa and Egypt had more publications. Both countries have research programs focused on PM, with Egypt having more collaborations with Europe and South Africa, which has more research supported by their national budget.

- Algeria, Cameroon, Ethiopia, Ghana, Kenya, Morocco, Nigeria, Tanzania, Tunisia, and Uganda have also shown initiatives in PM research.

Policy and scientific mapping

GROUP	HEALTH RESEARCH GOVERNANCE, FINANCE, RESOURCES, OUTPUTS AND INTERNATIONAL COLLABORATION	PM/ genomic research	COUNTRIES
1	Countries performing very well in health research. There is an important governmental commitment for health and PM research.	VERY HIGH	South Africa and Egypt
2	Most countries have governance structures and funding for health research, and well-established international collaborations. There is already an important research activity in PM.	HIGH/	Algeria, Cameroon, Ghana, Kenya, Morocco, Nigeria, Tanzania, Uganda, Tunisia, Zimbabwe
3	This group of countries have, in general, a good performance in health research, but their capacity in PM/genomic research is not as high as group2, there is potential/capacity to improve.	HIGH/ MEDIUM	Botswana, Burkina Faso, Ethiopia, Gambia, Malawi, Senegal, Zambia
4	These countries seem to be in a lower level of PM/genomic research capacity. They have an average performance in STI/health research. In some countries data are not available to score some dimensions.	MEDIUM/ LOW	Benin, Mali, Mozambique, Congo, Cote D'Ivoire, Congo Dem. Rep., Eswatini, Gabon, Guinea, Guinea Bissau, Mauritius, Namibia, Rwanda
5	This group includes countries with very low performance in PM/genomic research, but also with very low values in general for the rest of the indicators. In some cases, scoring has not been possible for some countries for which there are no data available for major STI indicators.	LOW	Angola, Burundi, Cabo Verde, Central African R., Chad, Comoros, Djibouti, Equatorial Guinea, Eritrea, Lesotho, Liberia, Libya, Madagascar, Mauritania, Niger, Sao Tome and Principe, Seychelles, Sierra Leona, Somalia, Sudan, Togo

- Group 1
- Group 2
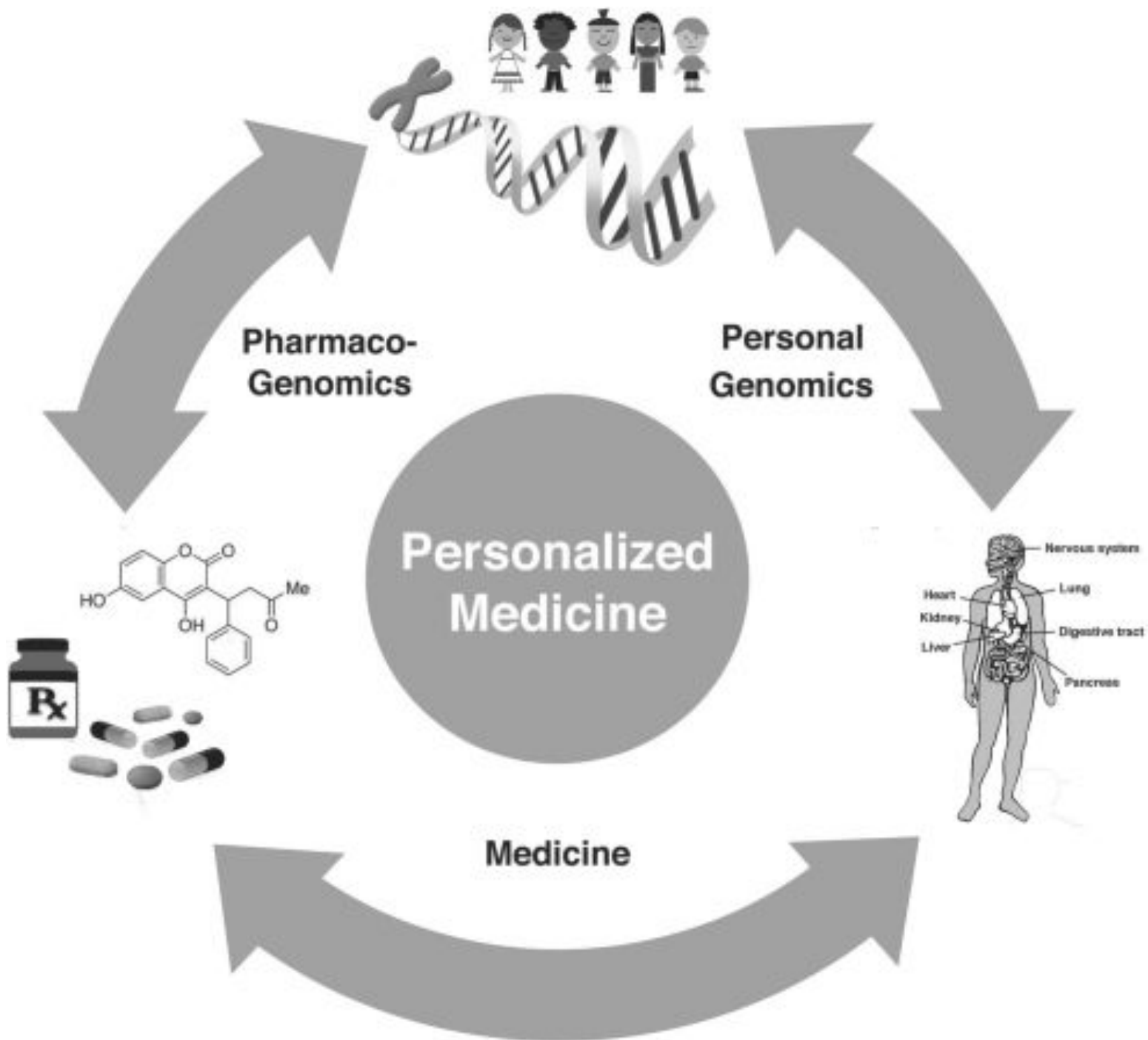- Group 3
- Group 4
- Group 5

Opportunities for PM in Africa

- Investing and building on current research efforts in PM
- Generating and Utilizing genomic data on African Population
- Establishing collaborations through the available platforms to strengthen PM implementation at the Continental level
- Developing skills locally and tapping into the diaspora-trained and skilled human resources to enhance PM
- Establishing and implementing the policy and ethics frameworks
- Citizen education

Recommendations to advance PM

- **Support research, data generation, mining, and translation into clinical care**: Building and supporting infrastructure for genetic data generation from African populations is important.
- **Skills and infrastructure development**: Training and educating sufficient people in specific areas to perform and interpret tests and support health systems results in a new generation of informed, empowered, engaged, and responsible healthcare providers and actors.
- **Ethical and regulatory framework development, strengthening, and harmonization**: It is essential to establish, strengthen, and harmonize a cohesive legal and regulatory framework that will cover data and sample protection and use in research.
- **Awareness creation**: Communicating the value of PM to policymakers, and researchers, as well as engaging and empowering the community, is essential.

Thank you.