Genomic Medicine & Genome Sciences

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Where We Are Now

Income Group	Lower-Middle-Income
Total Population	20.3 Million
Total Area	65,610 sqkm
Population Density	324 per sqkm
Life Expectancy At Birth	75 (71M, 78F)
Maternal Mortality Ratio	37.7 per 100,000 live births
Infant Mortality Rate	9 per 100,000 live births
Total Expenditure of Health as a % of GDP	3.8
Per Capita GDP (USD)	2,923

Sri Lanka's Health Care provides – Good outcomes with low investment.

But this is because of investment in the past, to keep our health outcomes good in the future, we need introduce technologies that will deal with problems of the future

Current Challenges

- Aging population
- Increase of Obesity, Non Communicable Diseases [Diabetes, Hypertension, Ischaemic Heart Disease, Stroke, Cancer]
- cKDU

Global Trends

Genome/Exome Sequencing

Bioinformatics and Electronic Health Records

Genetic Information linked with Clinical Information

Personalized Medicine

What do we have to do to prepare for this?

- Develop Genome Sequencing Facilities
  - First facility already set up at the Human Genetic Unit [need to upscale facilities]
- Develop a Database of Genetic Variants in the Sri Lankan population to enable proper interpretation of Genomic Data
  - Sri Lankan Genetic Variation Database already initiated by Human Genetics Unit [need to expand the database]
- Train Scientists on Genome Sequencing
  - A core team has been developed in the Human Genetics Unit
- Train Bioinformaticians on Genome Analysis
  - A core team has been developed in the Human Genetics Unit
- Train Doctors to Use These Technologies in Clinical Practice
  - Already initiated by the Human Genetics Unit – MSc Clinical Genetics and CPD Programmes

These efforts have to be scaled up with appropriate funding.

Genomic Medicine & Digital Health

Bioinformatics, Cognitive Modeling & Big Data

Sequence Other Genomes

A major milestone in Sri Lankan genomics research Lankan scientists sequence entire genome of 'Goda Wee' indigenous rice variety

Johns Keells Research – HGU Agreement on Synthetic Biology

H E L P I N G Y O U

T O S E E

U S M O R E

C L E A R L Y

John Keells Holdings PLC
Annual Report 2014/15

June 2014
JKH was reaffirmed as a great workplace in Sri Lanka through the Great Place to Work survey 2014.

Divested the 4.3 per cent stake in Expolanka Holdings PLC for a consideration of Rs.891 million.

September 2014
Cinnamon Red, Sri Lanka's first lean luxury hotel was launched.

Merger of JayKay Marketing Services (Private) Limited with Nexus Networks (Private) Limited.

October 2014
"OnThree20", the residential development project was completed.

November 2014
Launched Project WAVE – Working Against Violence through Education, focussed on eradicating gender based violence.

Divested the 4 per cent stake in Access Engineering PLC for a consideration of Rs.1.59 billion.

December 2014
JKH was adjudged the winner of the Gold Award in the "Cyril Gardiner Memorial Trophy for Overall Excellence" at the 50th Annual Report Awards Competition organised by CA Sri Lanka.

JKH topped LMD "100, the nation's premier ranking of listed companies.

January 2015
Union Assurance PLC completed the segregation of its Life and General Insurance businesses, in line with the Insurance Board of Sri Lanka (IBSL) stipulated regulations.

A 78 per cent stake in the General Insurance business was sold to Fairfax Asia Limited for a consideration of Rs.3.66 billion.

February 2015
At the ACCA Sustainability Reporting Awards, JKH was adjudged runner-up of the "Country's Most Transparent Corporate Business Entity" category and the winner of the "Conglomerate and Diversified" category.

March 2015
The Human Genetics Unit, Faculty of Medicine, University of Colombo together with John Keells Research successfully sequenced the entire genome of "Goda Vee", a rice variety, for the first time in Sri Lanka.

John Keells PLC launched "mAuction", an e-platform designed to link buyers and sellers onto a single platform at the Colombo Tea Auction.

Financial Achievements and Goals

Indicator (%)
EBIT growth
EPS growth (fully diluted)
Cash EPS growth (fully diluted)
Long term return on capital employed (ROCE)
Long term return on equity (ROE)
Net debt (cash) to equity

March 2015

The Human Genetics Unit, Faculty of Medicine, University of Colombo together with John Keells Research successfully sequenced the entire genome of "Goda Vee", a rice variety, for the first time in Sri Lanka.

Signing of the MOU between the Human Genetics Unit and the Sri Lanka Inventors Commission Establishment of an Ecosystem for Innovation and Techno Entrepreneurs in the arena of Genomics and Bioinformatics

“1000’s of Genomes 1000’s of Innovations”

Plan of Action and Funding Required

Months 1 to 3

1. Improvements to the data storage and bioinformatics facility at HGU to cater to the increasing demand with new investment. (Rs. 10 million)

2. Establishment of the on-line software platform for data-mining and collaboration for potential inventors and techno-entrepreneurs with new investment. (Rs. 10 million)

From Months 3 onwards upto Month 24

3. Sequencing of 1000 genomes of humans with various medical conditions and economically important endemic plants of Sri Lanka. (Rs 300 million: 150 million in year 1; 150 million in year 2)

Plan of Action and Funding Required

From Month 3 onwards upto Month 36

1. Call for applications from inventors and techno-entrepreneurs for ideas for commercial activity based on discoveries made by mining the genome data. [These calls will be made one in 6 months]

2. Training for inventors and techno-entrapreneurs on mining the data.

3. Evaluation of discoveries.

4. Validation of discoveries with seed funding from government through SLIC.

5. Patenting of discoveries.

6. Commercialisation of discoveries. (Rs. 5 Million; Rs. 2.5 million per year)

Economics


THE $14.5 BILLION THE U.S. GOVERNMENT INVESTED IN THE HUMAN GENOME EFFORT SINCE 1988 HAS HELPED DRIVE:
$965 BILLION IN ECONOMIC IMPACT
$293 BILLION
IN TOTAL PERSONAL INCOME
$169 BILLION
INCREASE IN ECONOMIC OUTPUT SINCE 2010
In 2012 alone, genomics-related research, development and commercialization activities generated:
$65B
IN U.S. ECONOMY
152,314
SUPPORTED JOBS
$19B
IN PERSONAL INCOME

Challenges

- **Funding**
- **Infrastructure Development**
- **Staff**


Thank You