

SOCIO-ECONOMIC CHARACTERISTICS AND AGRICULTURAL PRODUCTIVITY

TEGEMEO INSTITUTE, EGERTON UNIVERSITY

Presented at the Workshop on “Status, Trends and Opportunities in Smallholder Agricultural Productivity and Market Participation for Improved Food Security and Incomes” Othaya Social Hall, Othaya, 27th July, 2011





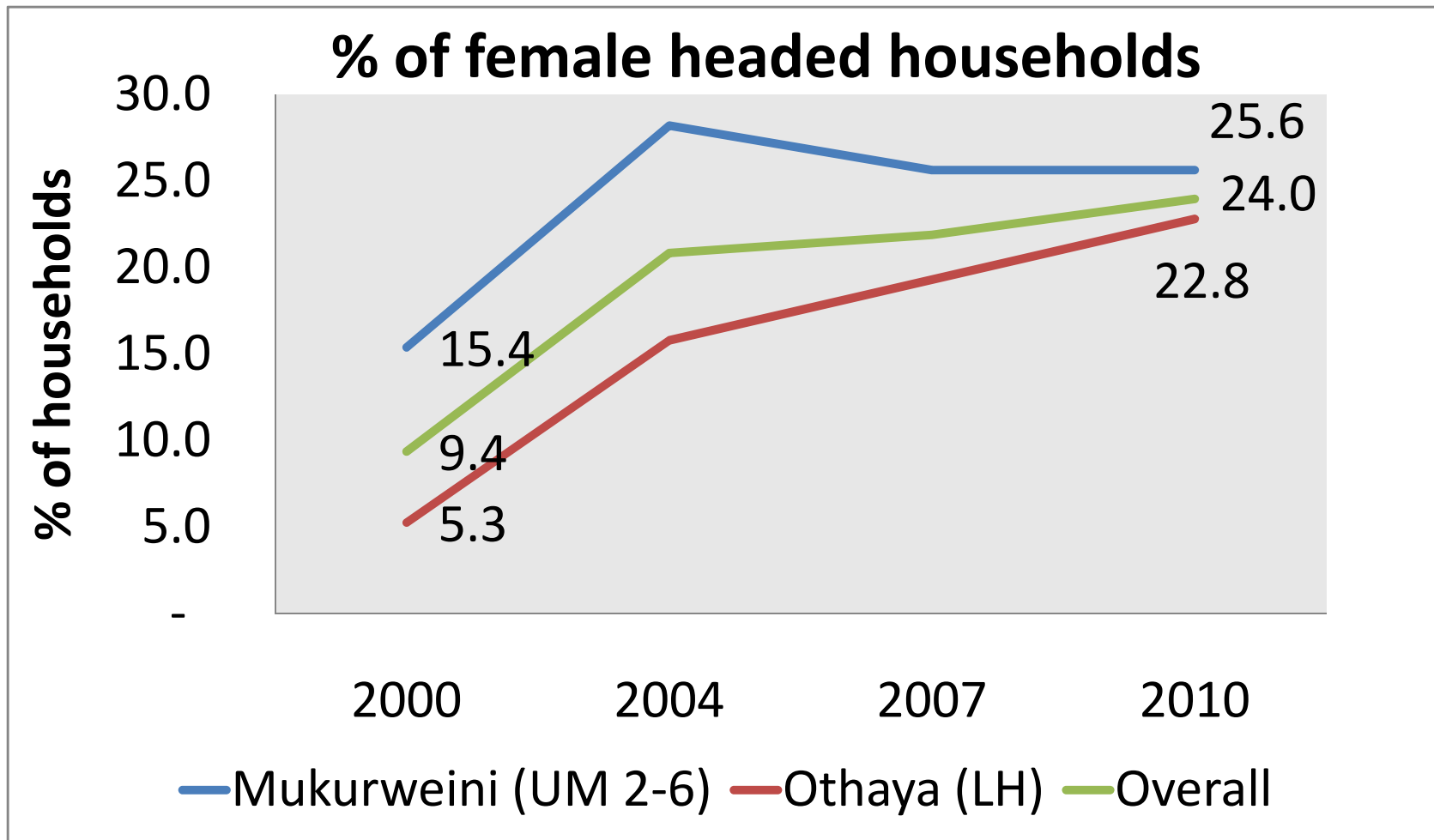
SOCIO-ECONOMIC CHARACTERISTICS



Outline

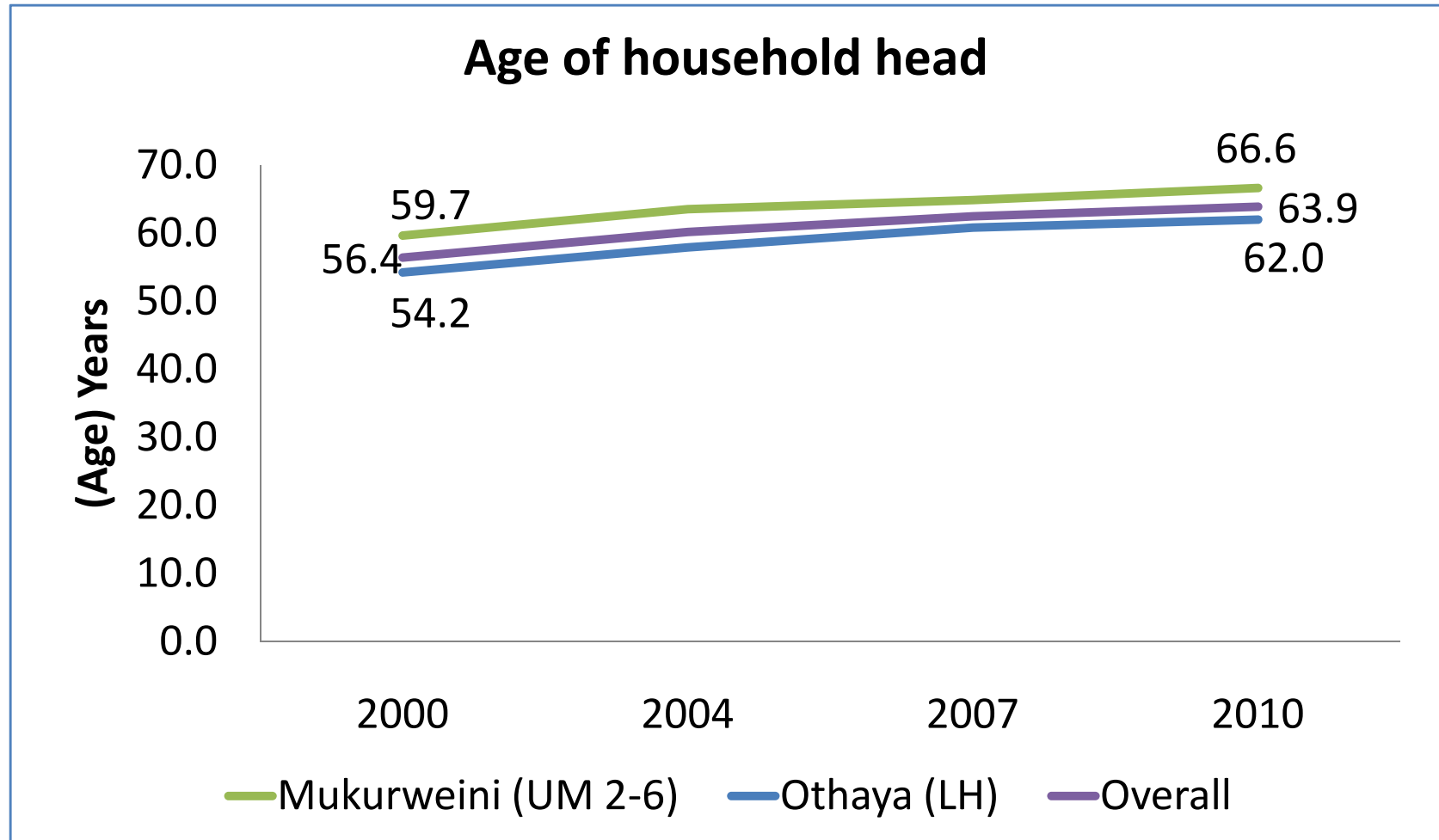
- Gender of head
- Age of head
- Household size
- Dependency ratio
- Land size (owned and cultivated)
- Value of assets
- Livestock keeping
 - % of hh keeping various livestock types
 - Livestock herd/flock sizes

Percent of Female headed households



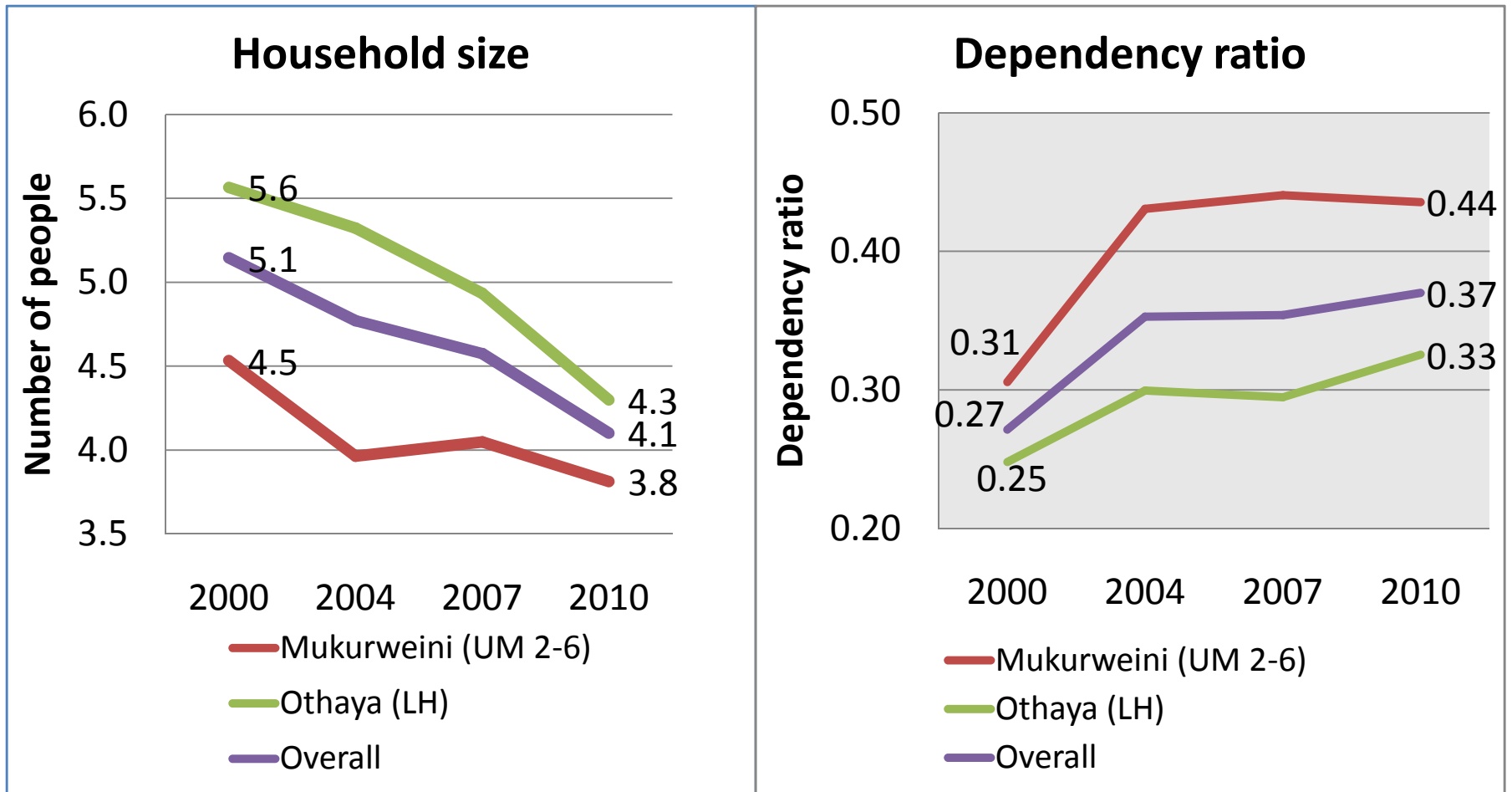
- Female headed households increasing over time
- Increase more rapid in Othaya

Age of household head



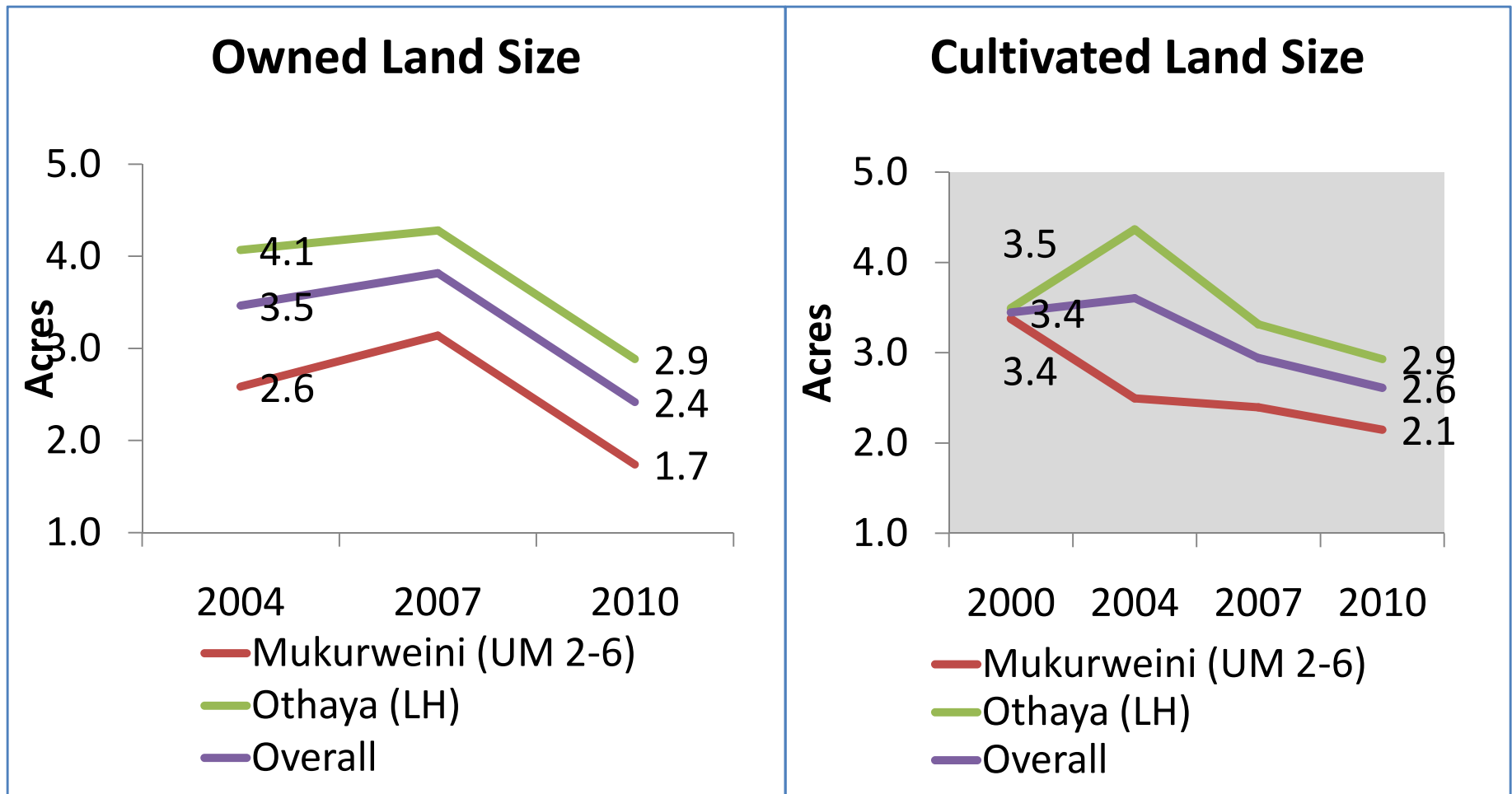
- Household heads aged over 60 years
- Othaya has slightly younger heads

Household Size & Dependency Ratio



- No. of people per household falling; higher in Othaya
- Dependency ratio rising; higher in Mukurweini

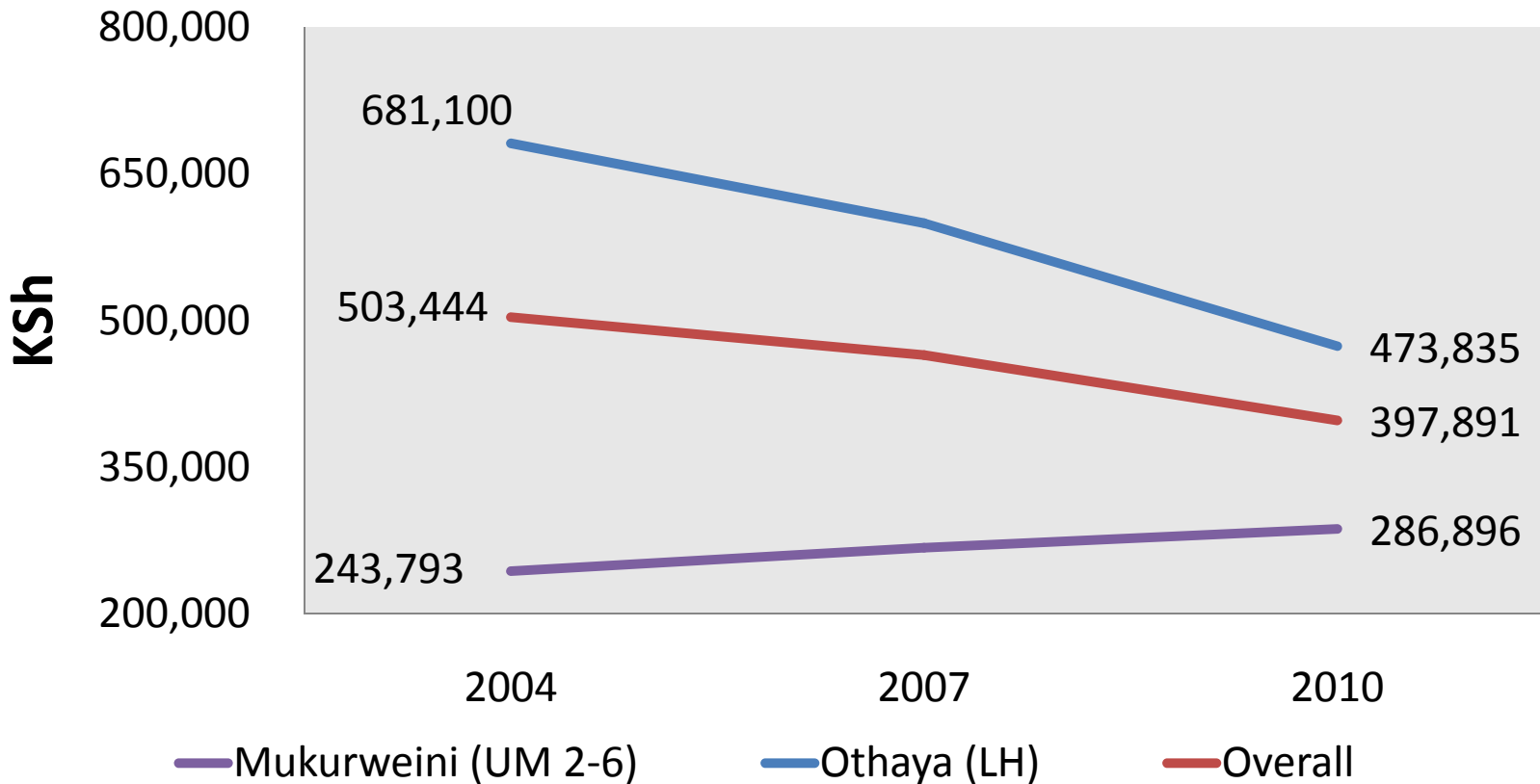
Household Land Size



- Land sizes (owned and cultivated) declining; but Othaya has larger land sizes

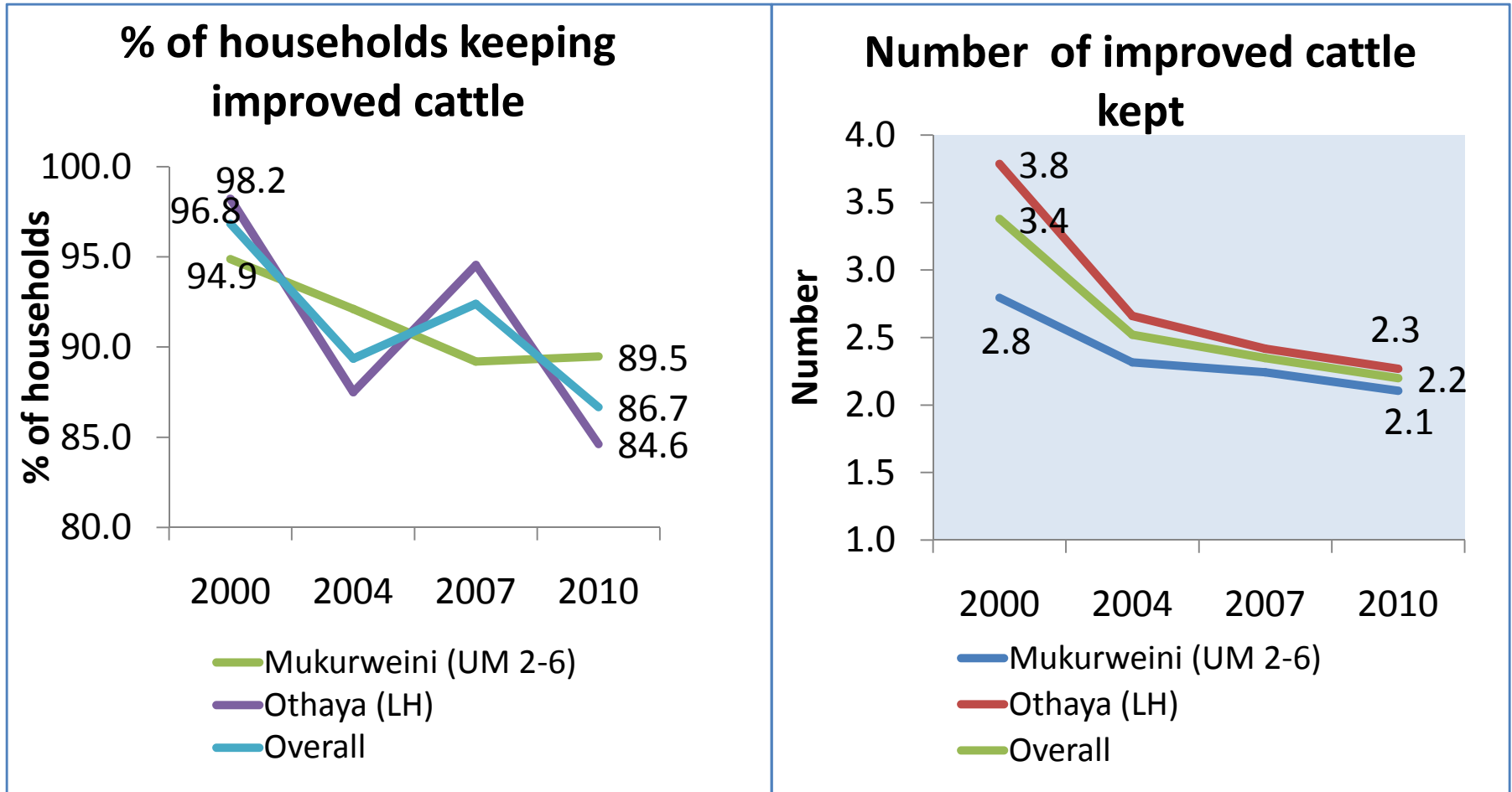
Household Assets

Real Value of Assets



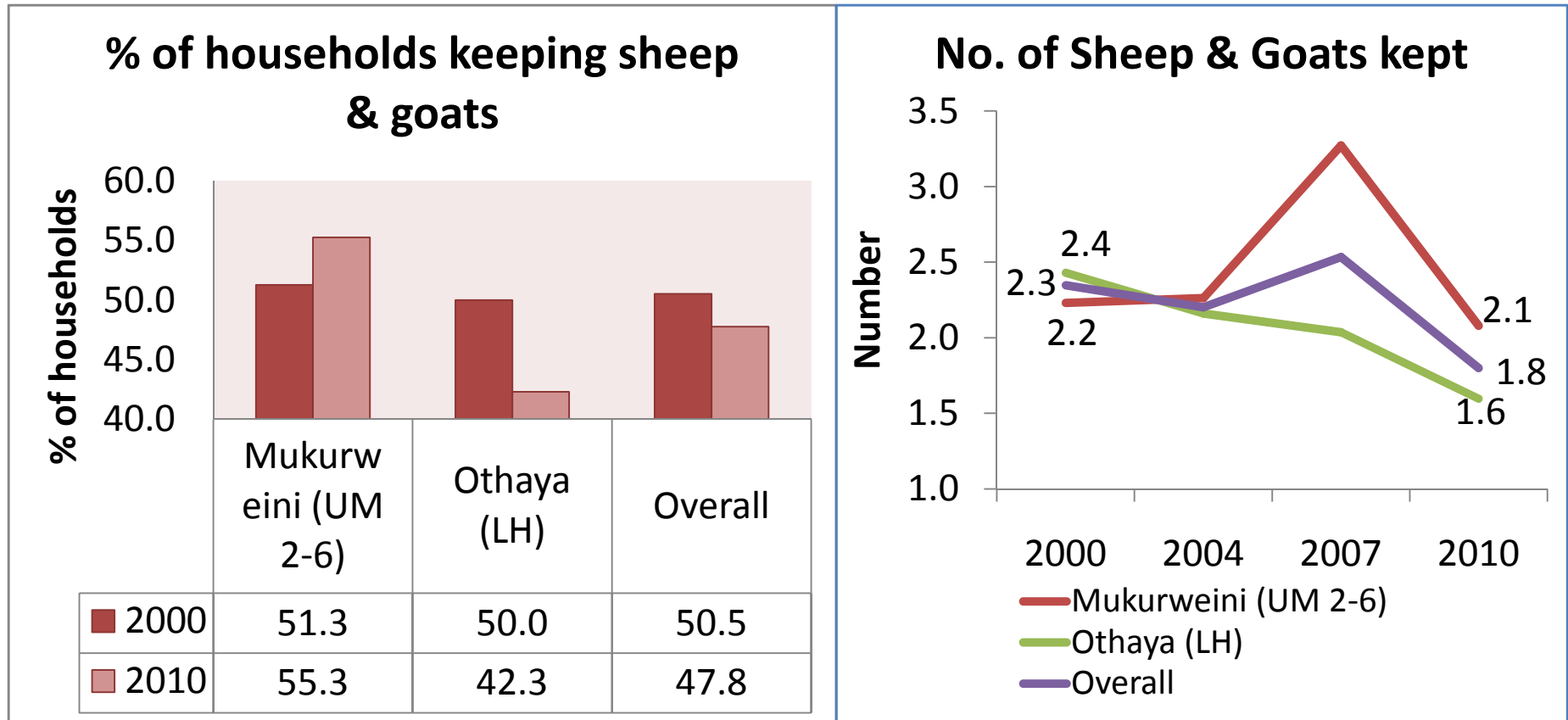
- Asset value (in real terms) declining
- Values higher in Othaya

Improved Cattle Keeping



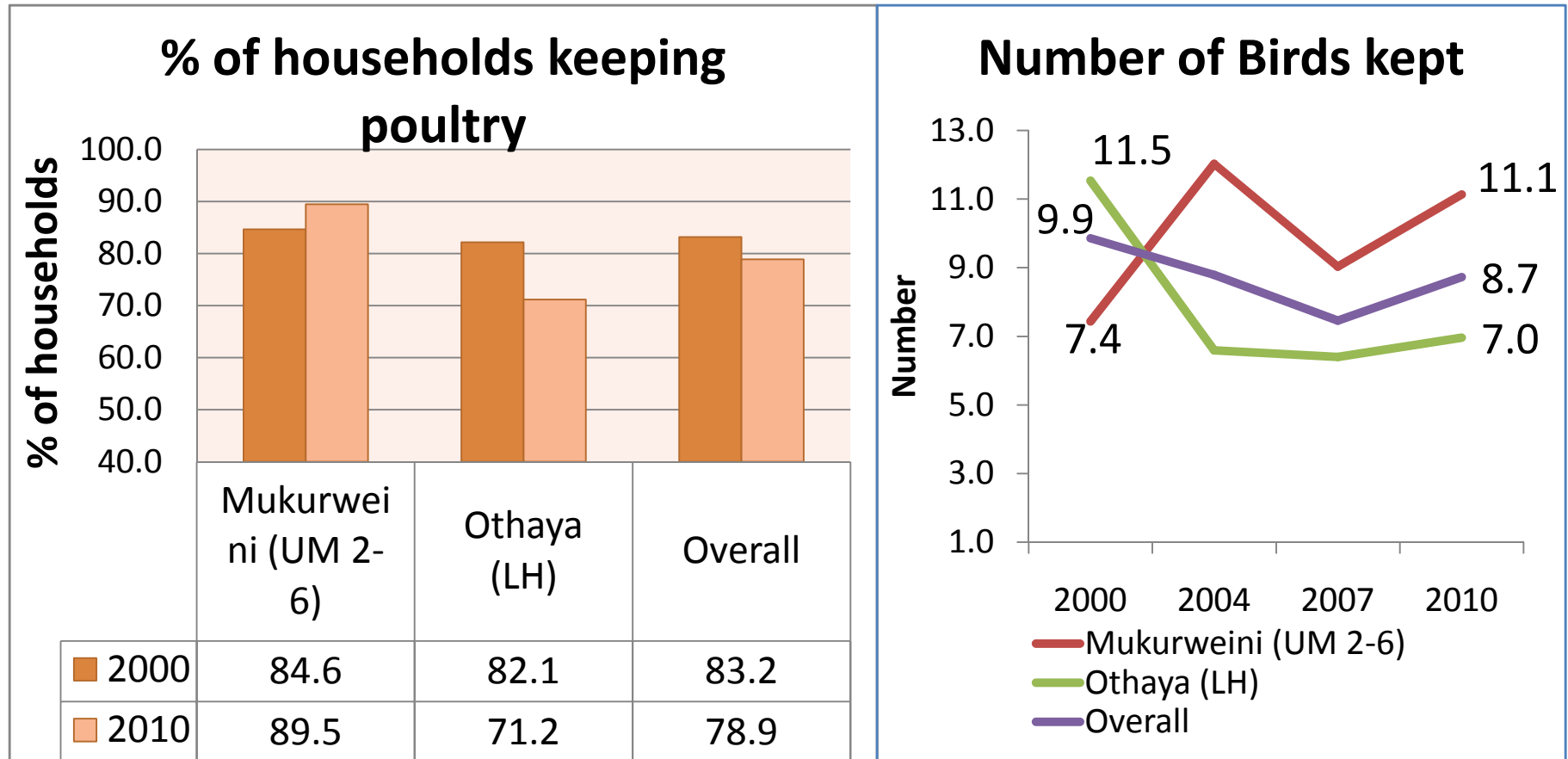
- % of households keeping improved cattle has declined
- Herd size for improved cattle kept also declined; decline faster in Othaya

Sheep and Goats Keeping



- % of households keeping sheep & goats has declined in Othaya and increased in Mukurweini
- Flock size generally declined, but remained higher in Mukurweini

Poultry Keeping



- % of households keeping poultry has declined in Othaya and increased in Mukurweini
- Flock size also declined in Othaya but increased in Mukurweini



AGRICULTURAL PRODUCTIVITY



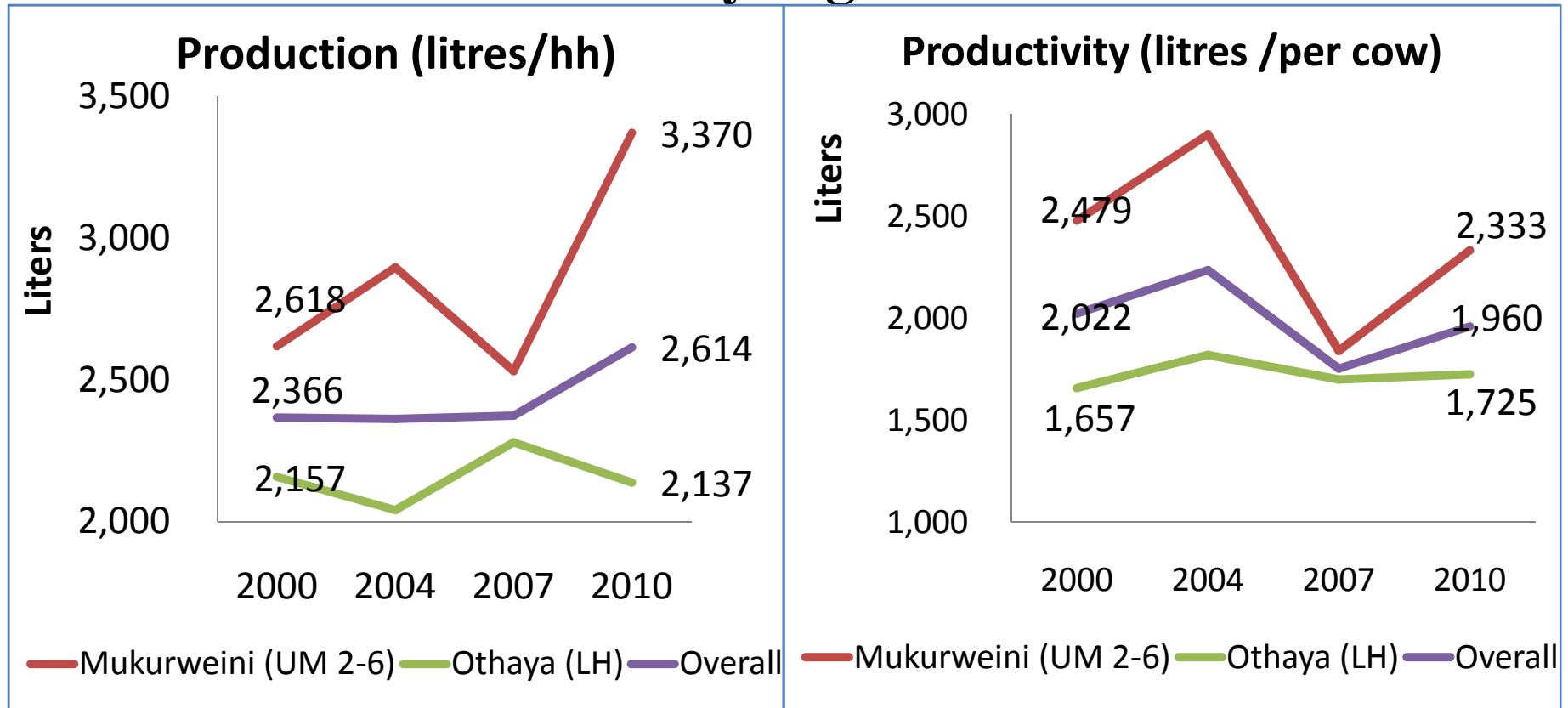
Outline

- Production and Productivity (yield)
 - Milk (dairy)
 - Food crops (Maize, Beans)
 - Cash crops (Tea, Coffee)



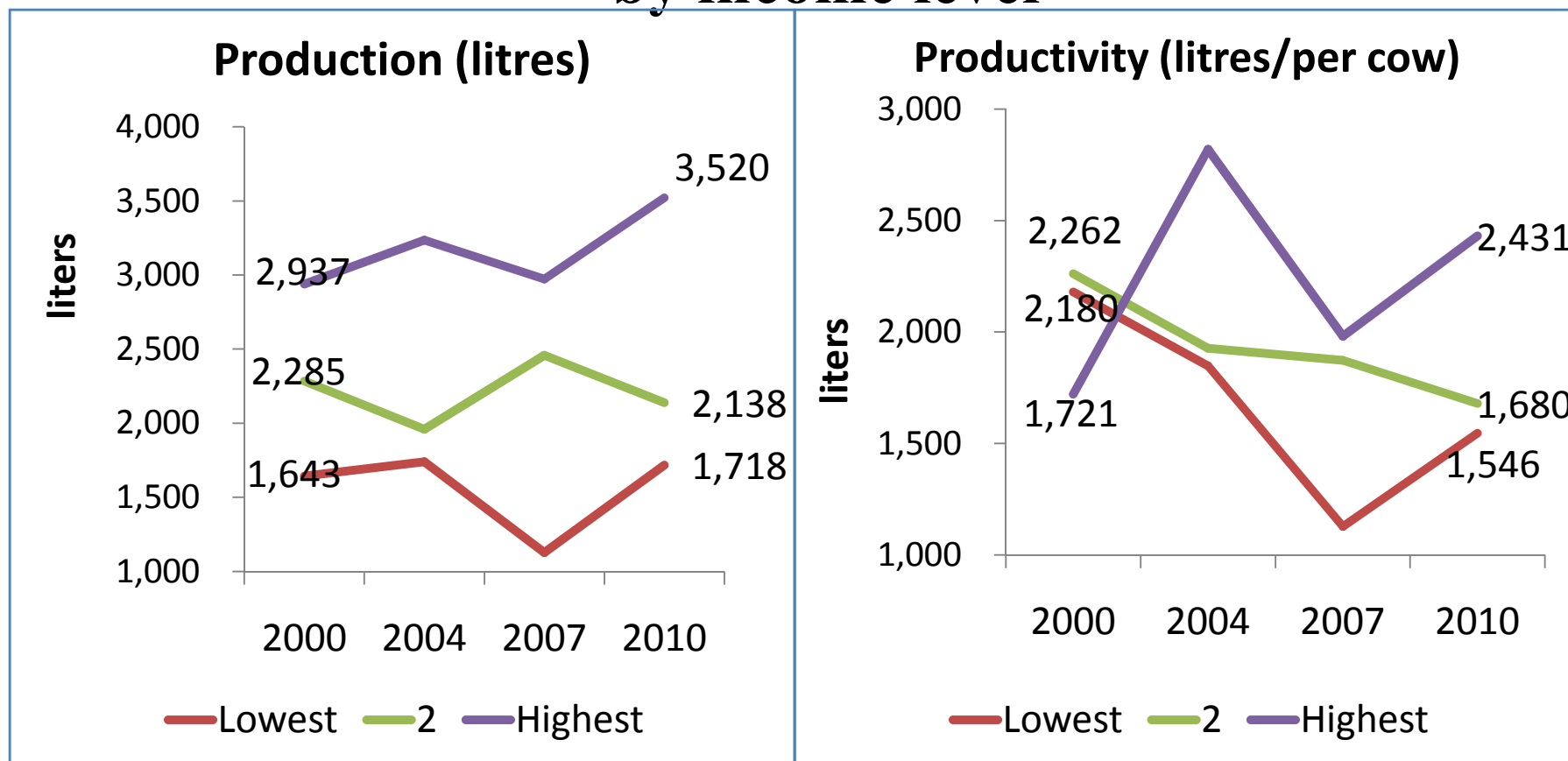
Dairy production and Productivity

Household Annual Milk Production and Productivity – by region



- Oscillating trend in production and productivity
- Both production and productivity higher in Mukuruweini than Othaya

Household Annual Milk Production and Productivity – by income level

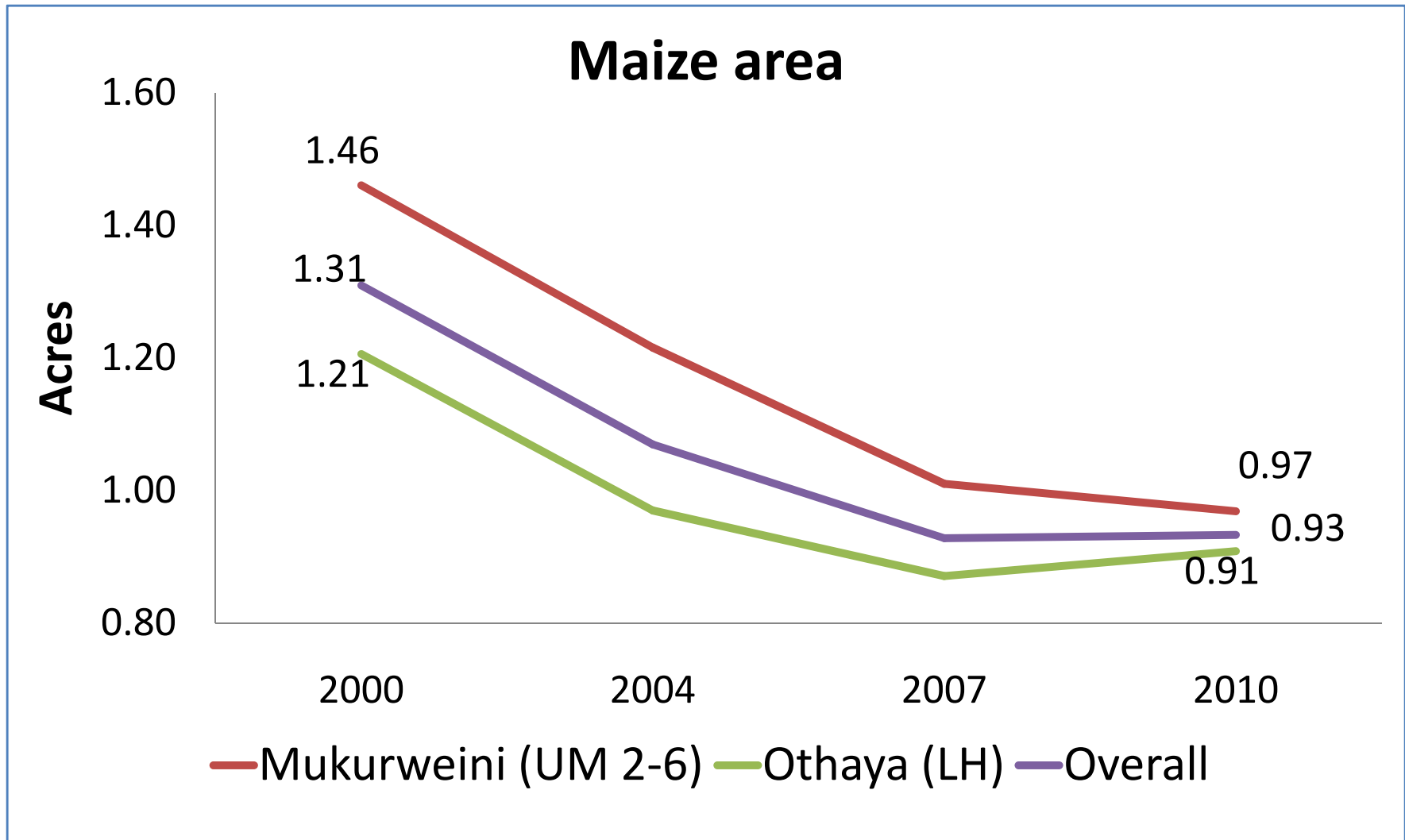


- Oscillating trend in production; no clear trend in productivity but a general decline observed for lowest and 2nd income groups
- Production and productivity highest for highest income group



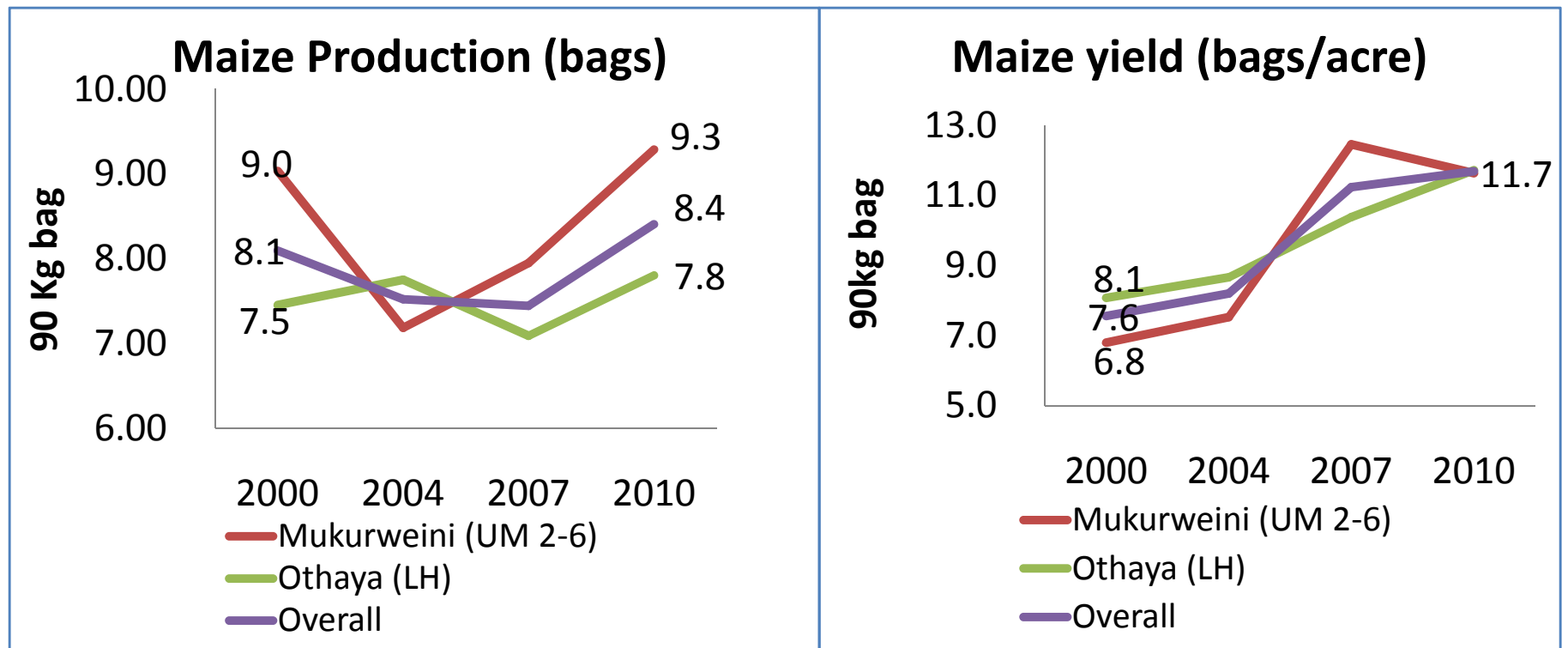
Maize Production and Yield

Cultivated Area Under Maize



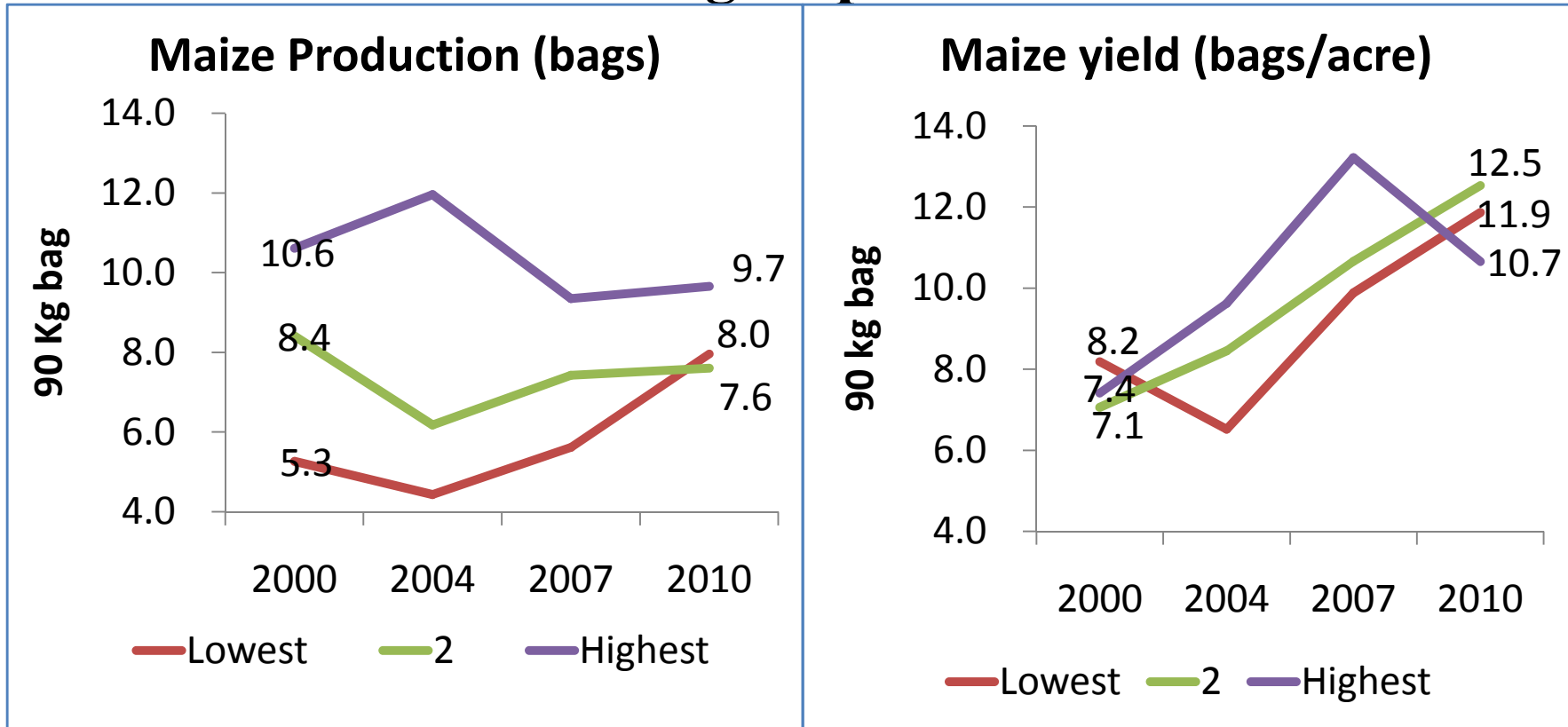
- General decline in maize area to just below one acre in both regions
- Area declined by 29%

Household Maize Production and Yield – by region



- Production declined up to 2004 then took an upward trend; higher in Mukurweini than Othaya
- Yield increased in both regions to reach 11.7 bags/acre; increase faster in Mukurweini; 31% increase overall
- Yield still below potential of 13.5 bags/acre (based on KARI's on-farm trials) and 26 bags/acre (based on KARI's on-station trials)

Household Maize Production and Yield – by income group

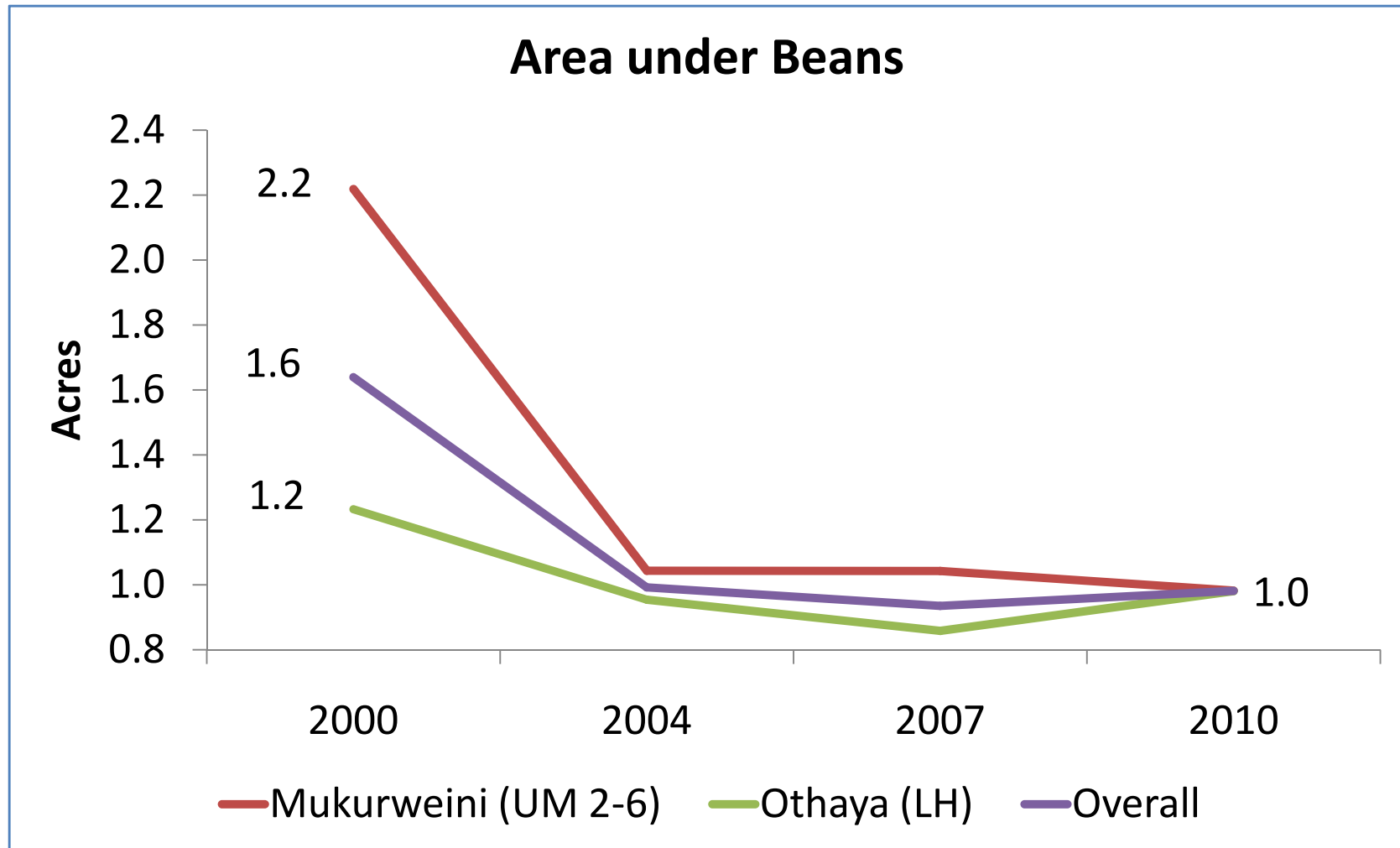


- Production declined up to 2004 then took an upward trend; highest in the highest income group
- Yield generally increased in all the groups; highest in 2nd income group in 2010



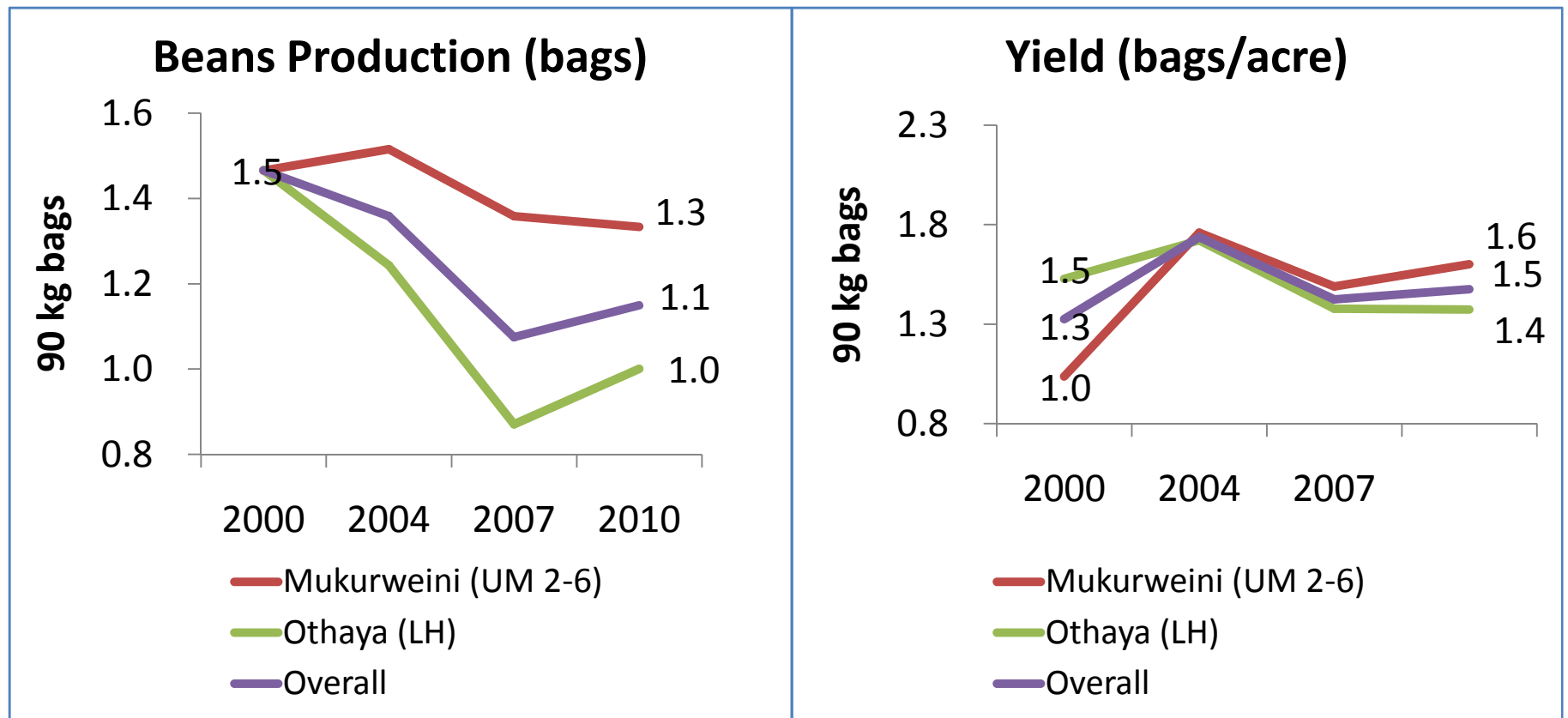
Beans Production and Yield

Cultivated Area Under Beans



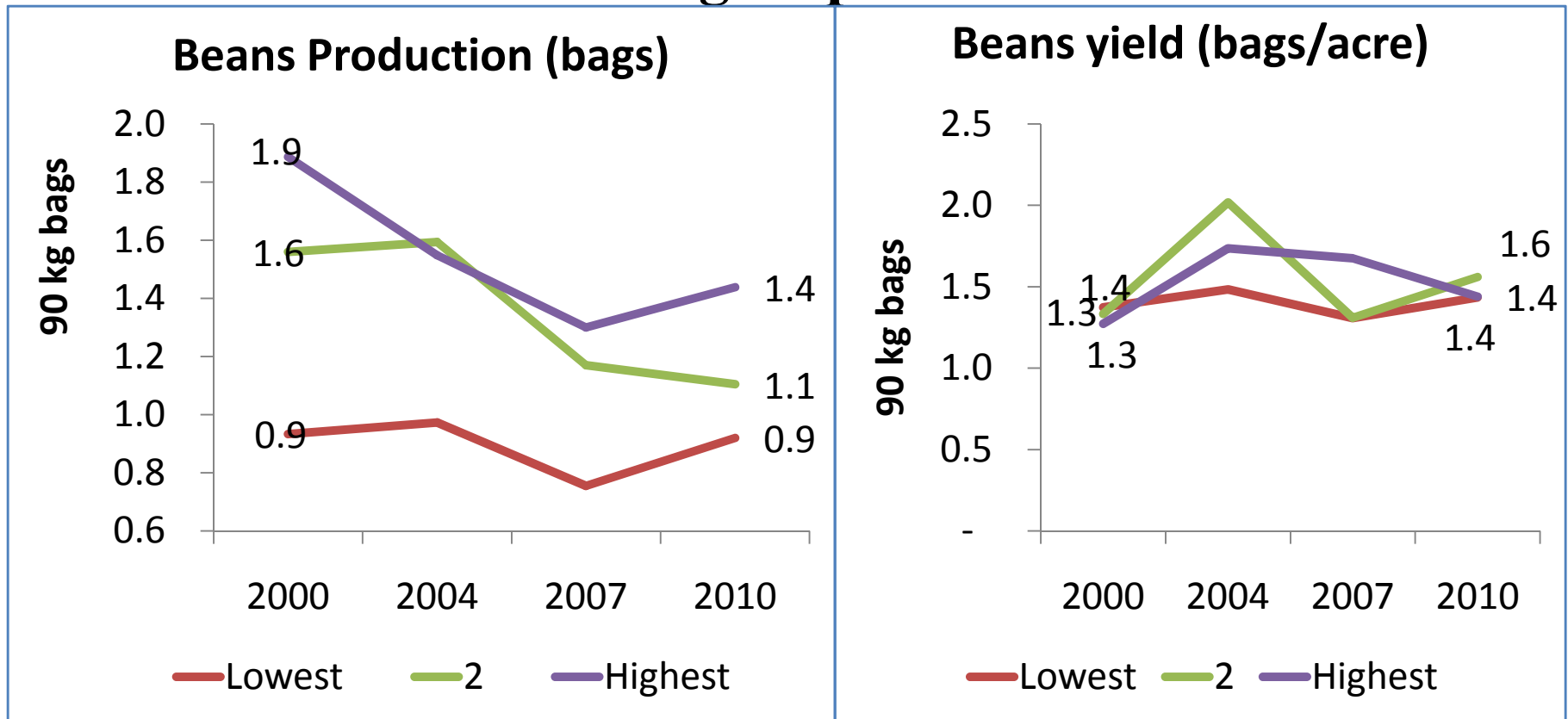
- General decline in area under beans ; mirrors decline in maize area

Household Beans Production and Yield – by region



- General decline in production, but production higher in Mukurweini than Othaya
- Increase in yield in Mukurweini but slight decline in Othaya
- Yield higher in Mukurweini, but still below potential of 3.6 bags/acre (based on KARI's on-farm trials) and 9.9 bags/acre (based on KARI's on-station trials)

Household Beans Production and Yield – by income group

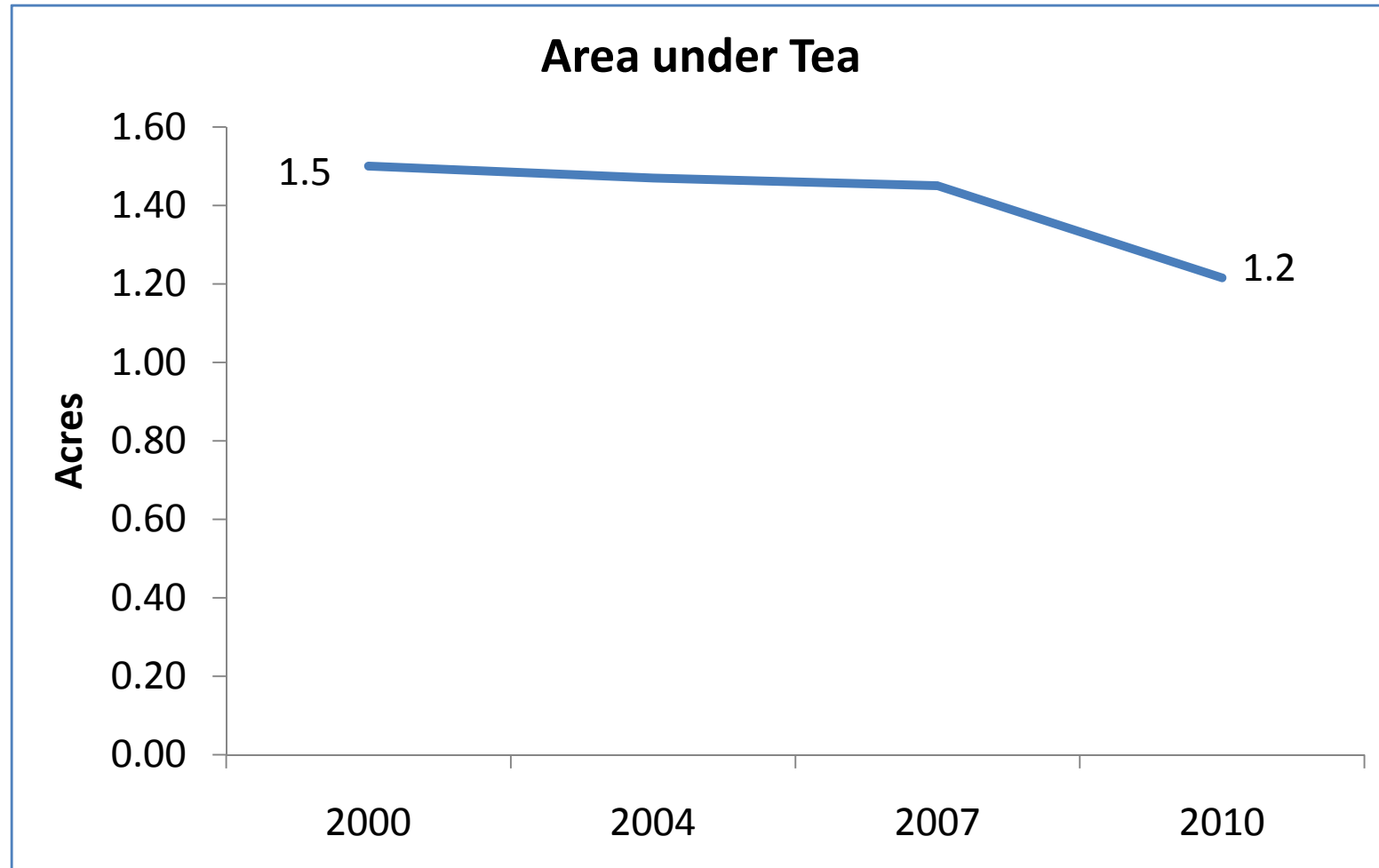


- Production declined for all groups;
- Production quantity rose with income level
- Yield generally increased in all the groups; highest in 2nd income group in 2010



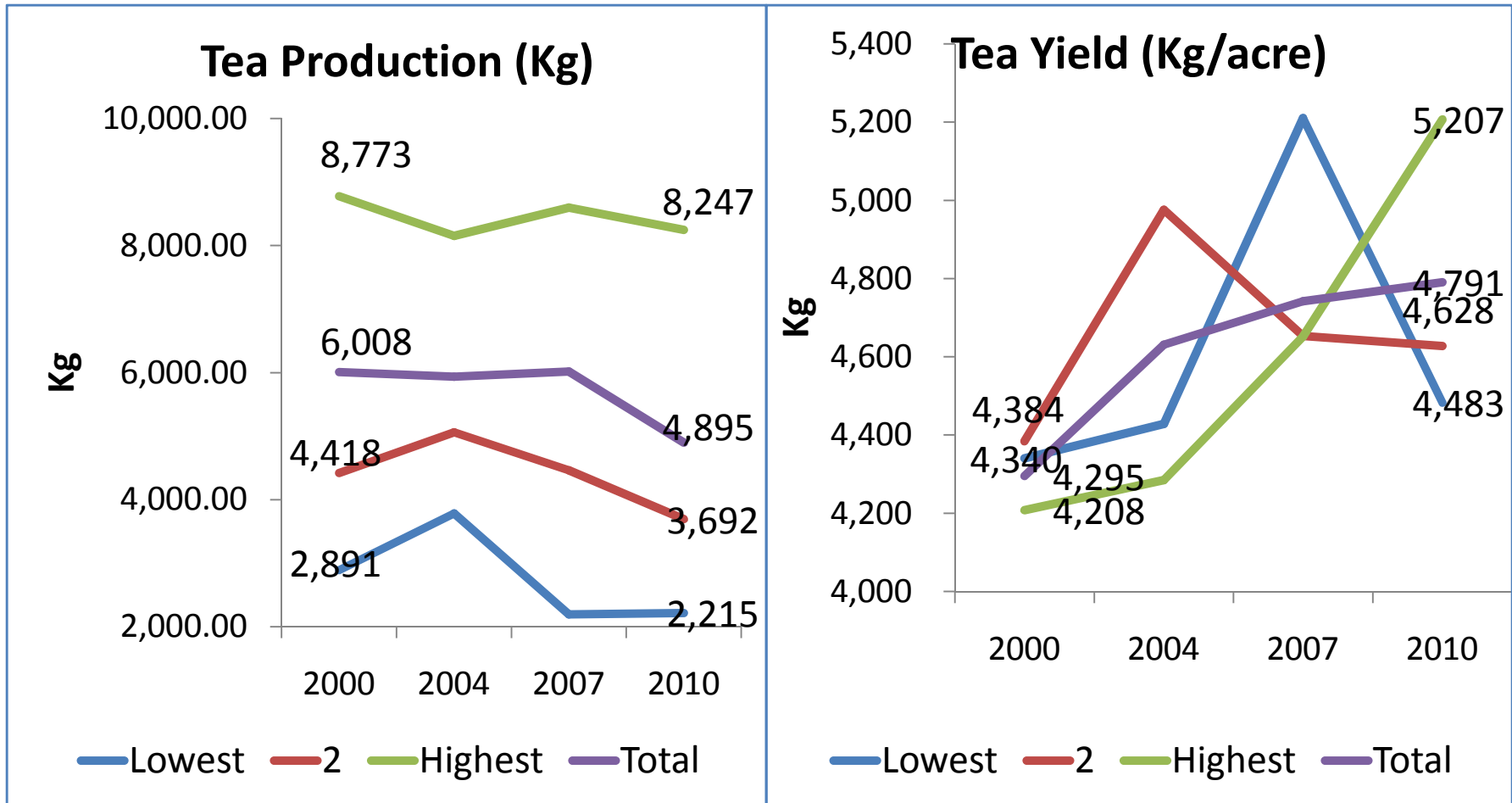
Production and Yield of Tea

Cultivated Area Under Tea



- Tea planted only in Othaya (LH)
- Slight decline in area under tea

Household Production & Yield of Tea

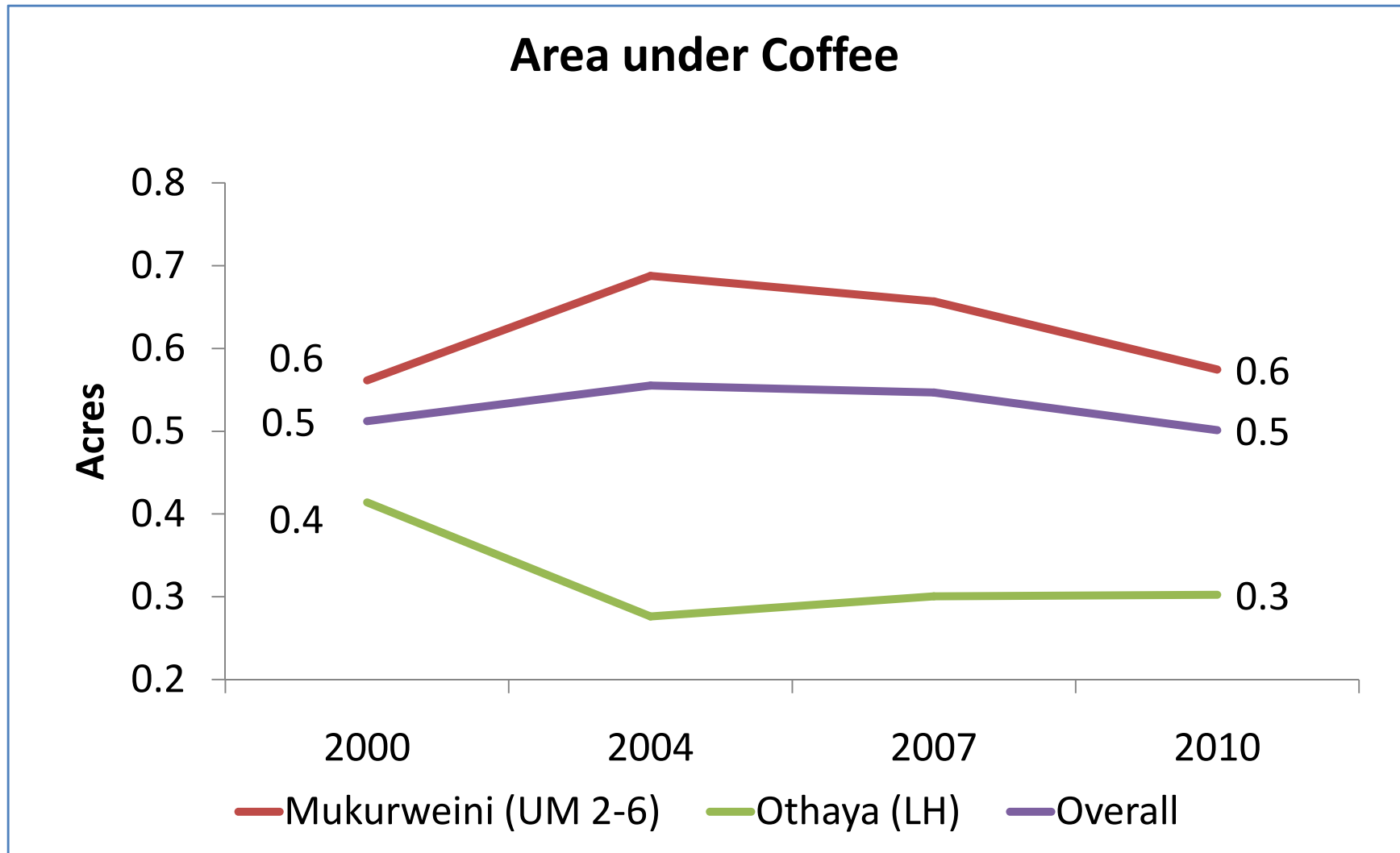


- General decline in production of tea; production increased with income level
- General increase in yield. Increase consistent and greater for highest income group



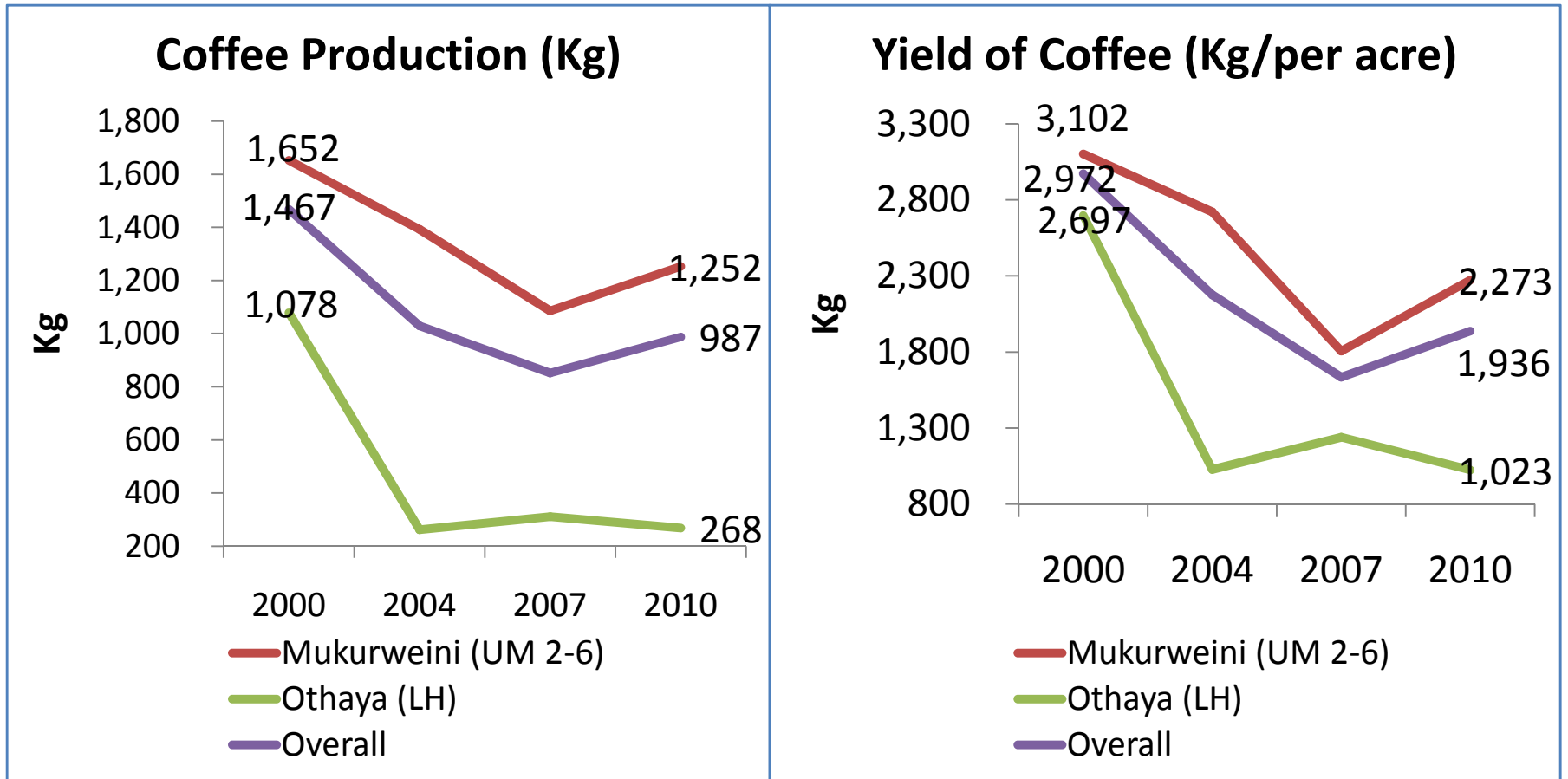
Production and Yield of Coffee

Cultivated Area Under Coffee



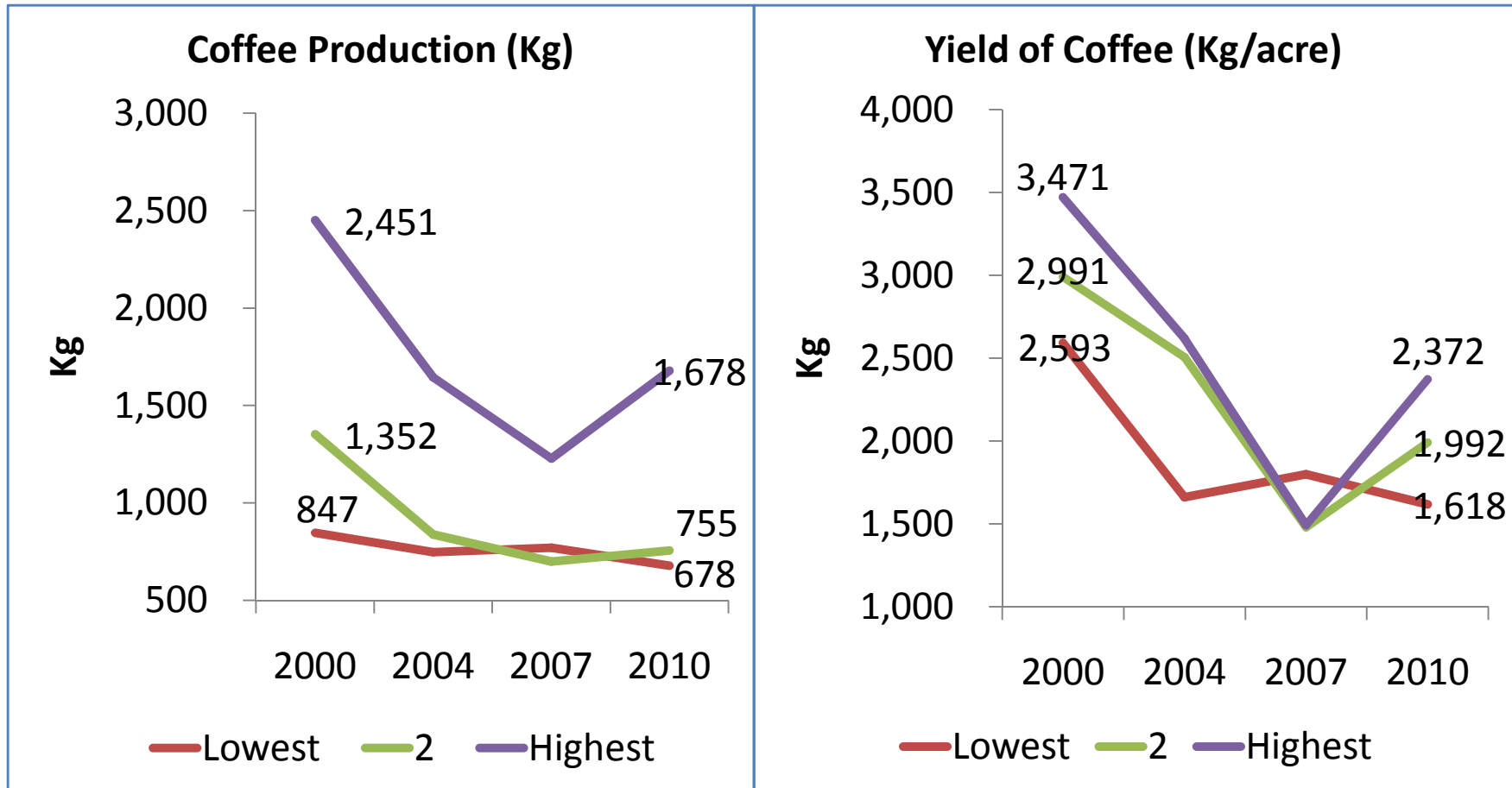
- Overall stagnation in area under coffee
- Area under coffee larger in Mukurweini than Othaya

Household Production & Yield of Coffee– by region



- General decline in both production and yield; decline more pronounced in Othaya ; Yield overall: 3.6kg vs potential 20-40kg/tree
- Both production and productivity higher in Mukurweini than Othaya

Household Production & Yield of Coffee– by income group



- Decline in both production and yield for all groups
- Both production and yield highest for highest income group





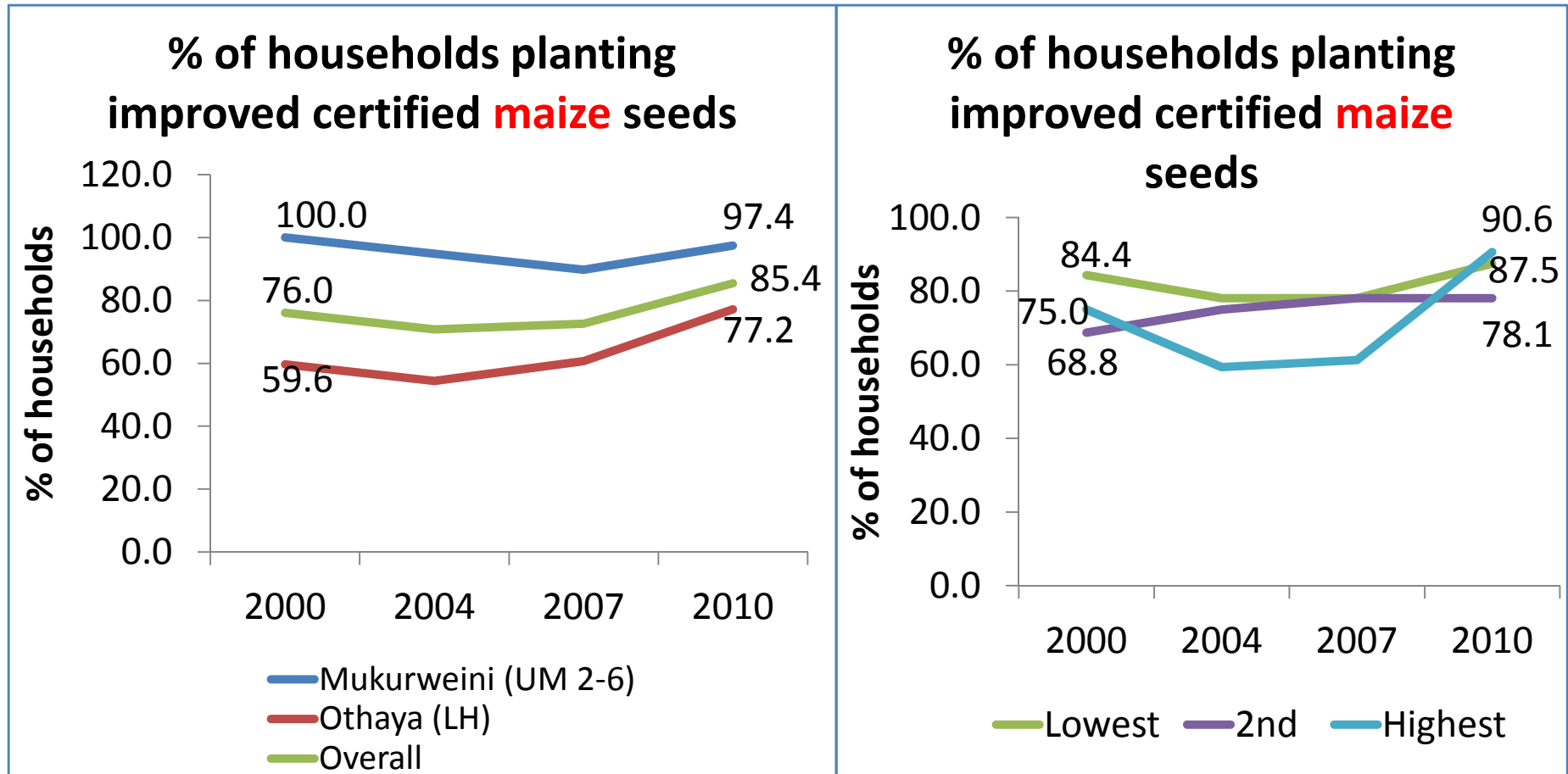
INPUT USE



Outline

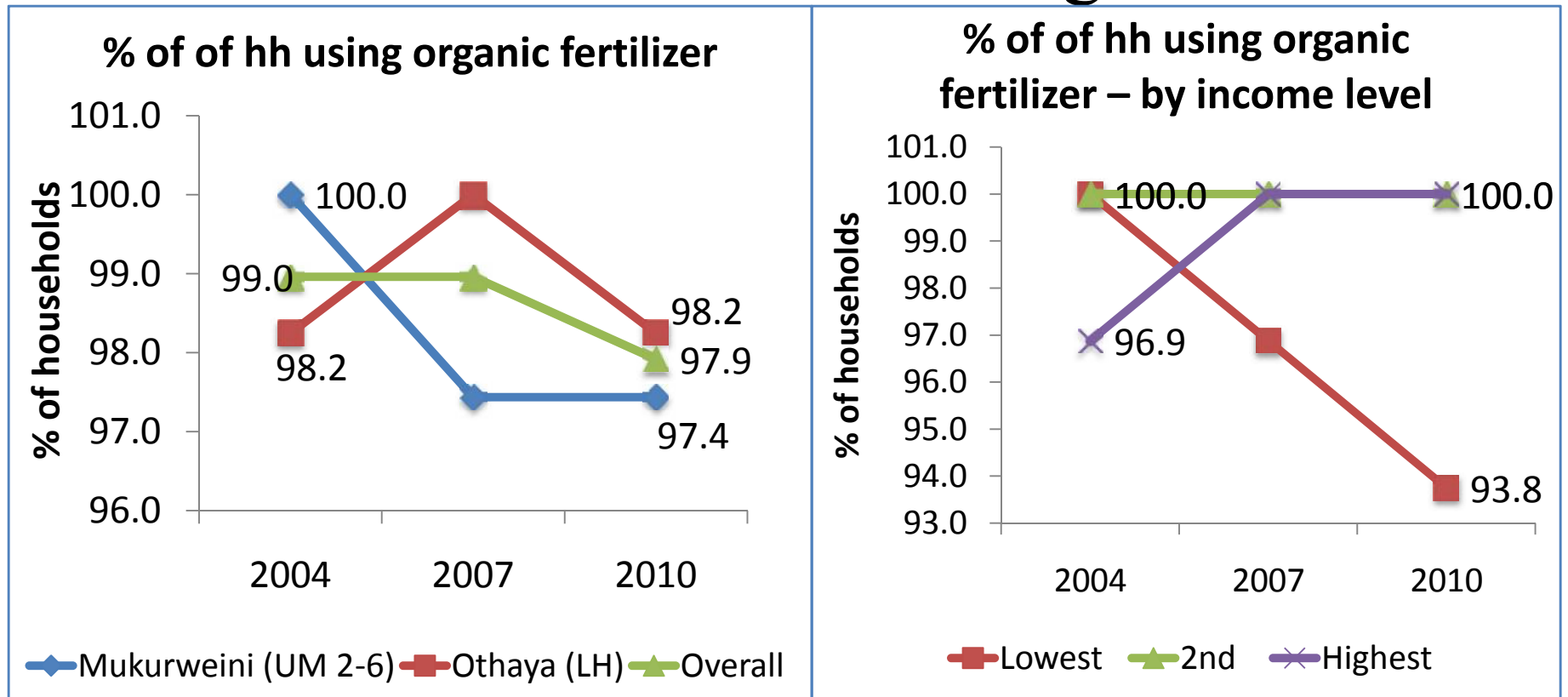
- Use of Improved Certified Seed
 - % of hh using improved certified seed (maize, beans)
- Use of Fertilizer
 - % of hh using fertilizer (organic & inorganic)
 - % of land under organic & inorganic fertilizer
 - Fertilizer application rate
 - Fertilizer dose rate

Percent of households planting improved certified seed for staples



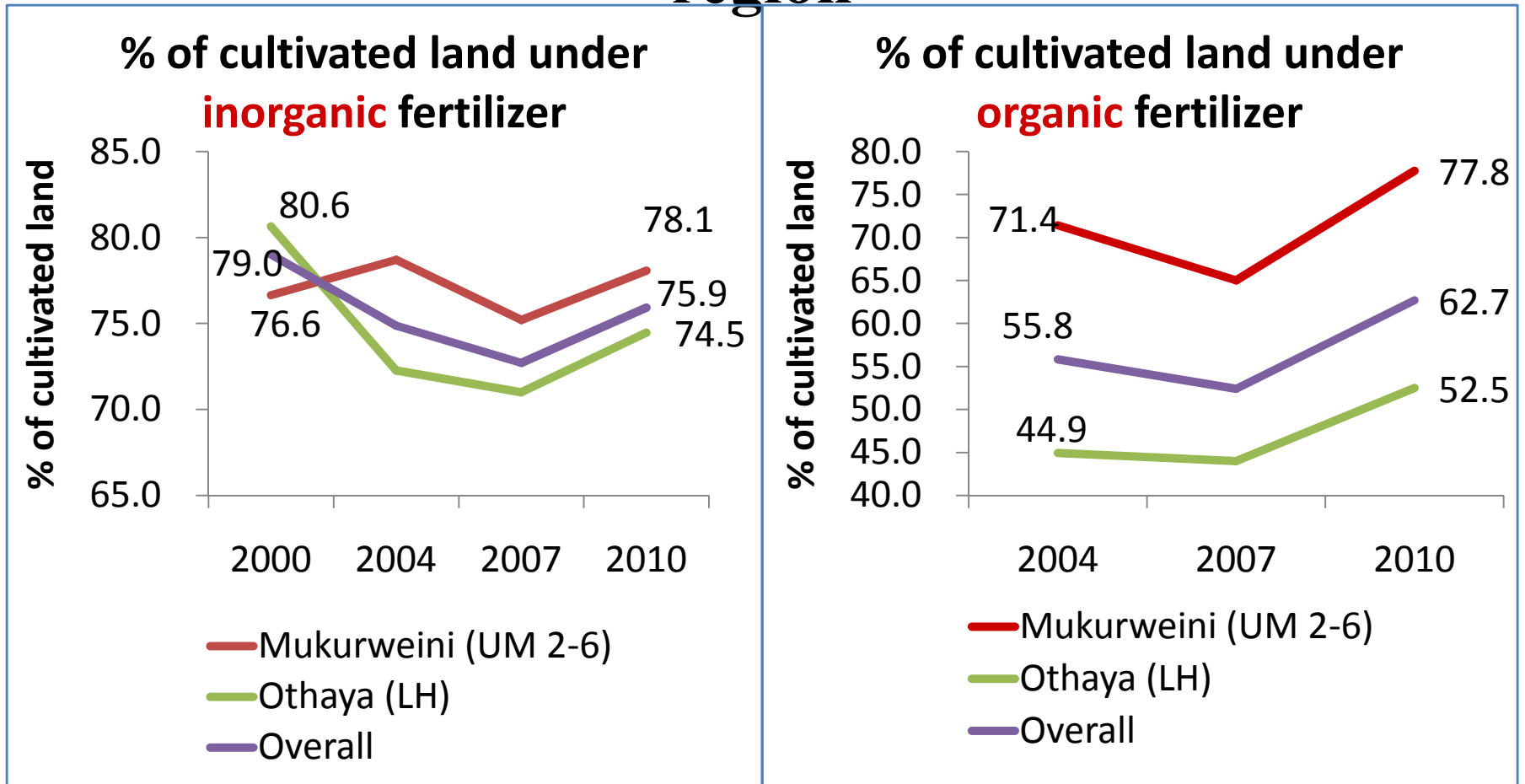
- Adoption rate of improved certified seed for maize generally increased; higher in Mukurweini than Othaya
- General increasing trend across income groups; high even in the lowest income group

Percent of households using Fertilizer



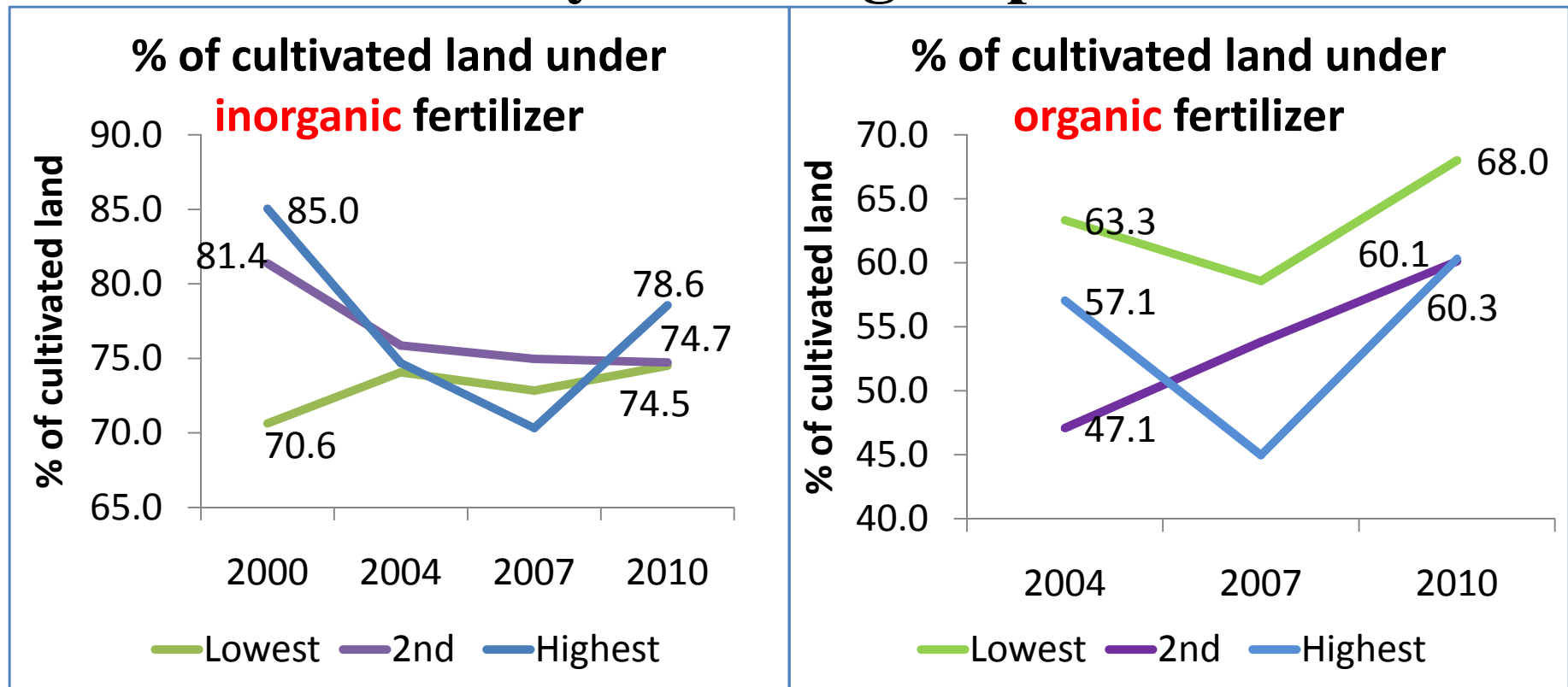
- **All hhs used inorganic fertilizer**
- High adoption rate of organic fertilizer; over 90%
- Adoption rate lower for lower income hhs than higher income hhs

Percent of Cultivated Land Under Fertilizer – by region



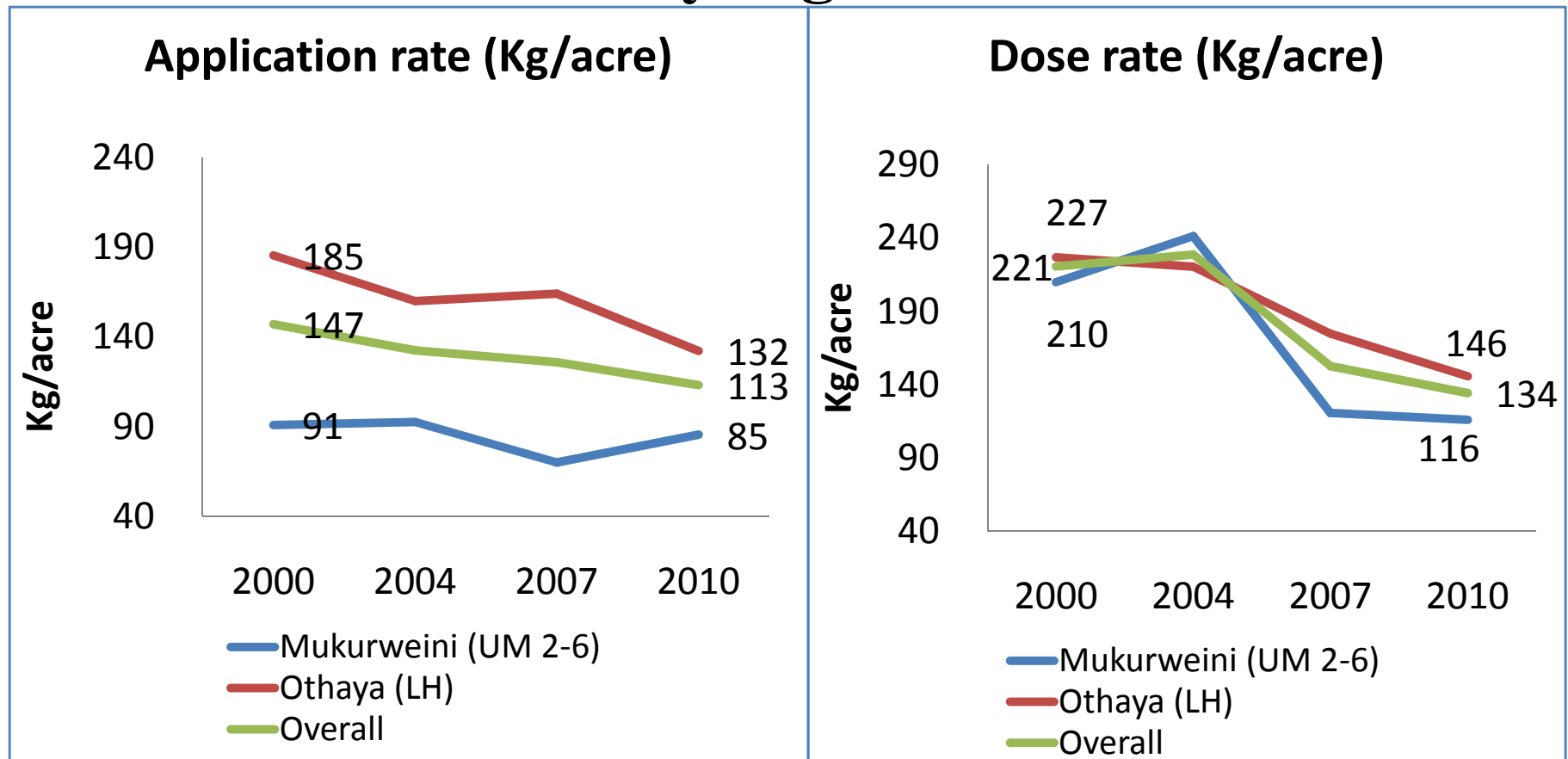
- % of land under inorganic fertilizer slightly declined in Othaya and increased and became higher in Mukurweini
- % of land under organic fertilizer generally increased; higher in Mukurweini

Percent of Cultivated Land Under Fertilizer – By income group



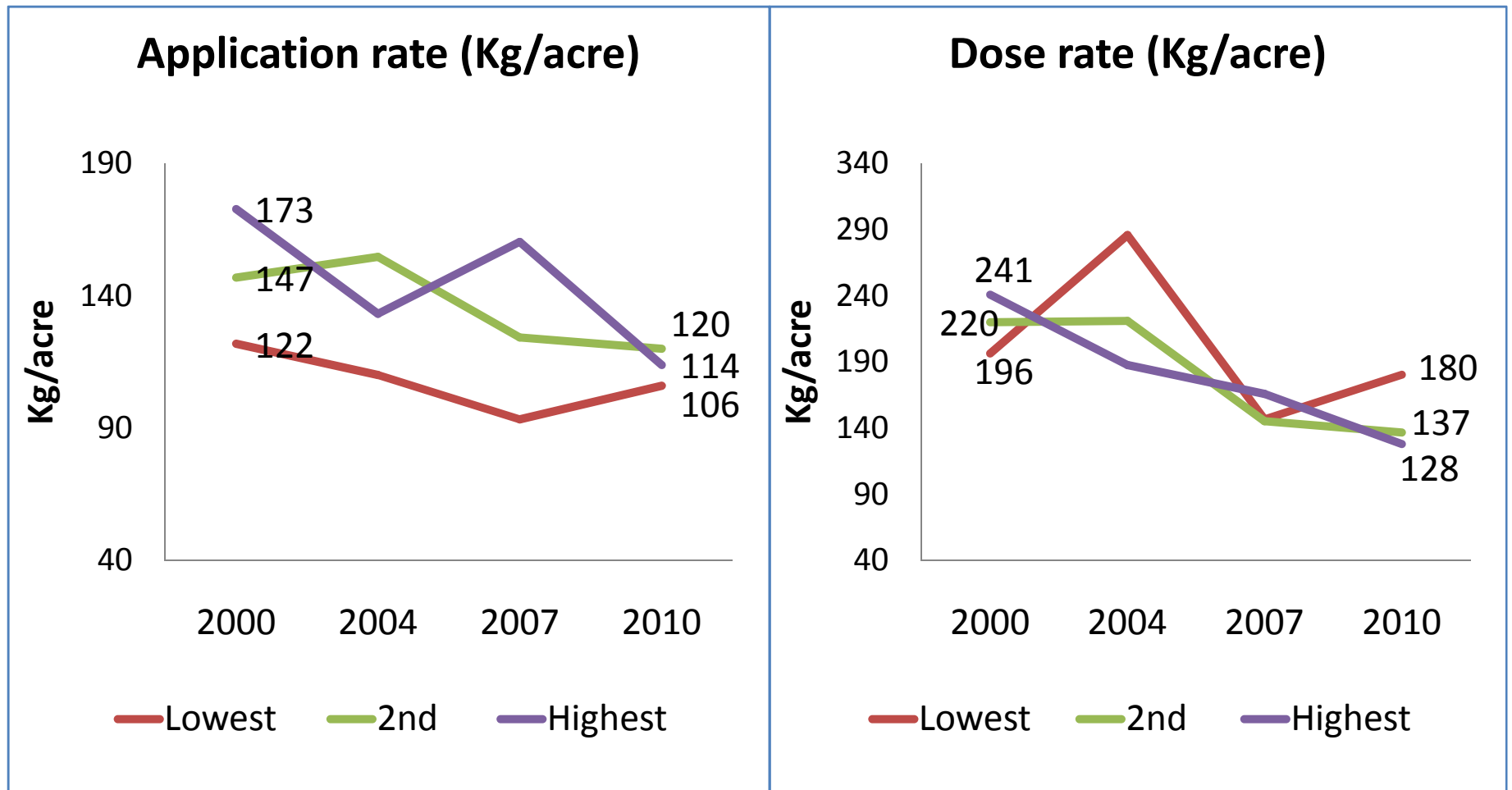
- % of land under inorganic fertilizer slightly declined for all groups, but increased rapidly and remained highest for highest income group in 2007-2010
- % of land under organic fertilizer generally increased; highest for lowest income group

Inorganic Fertilizer Application & Dose rate – by region



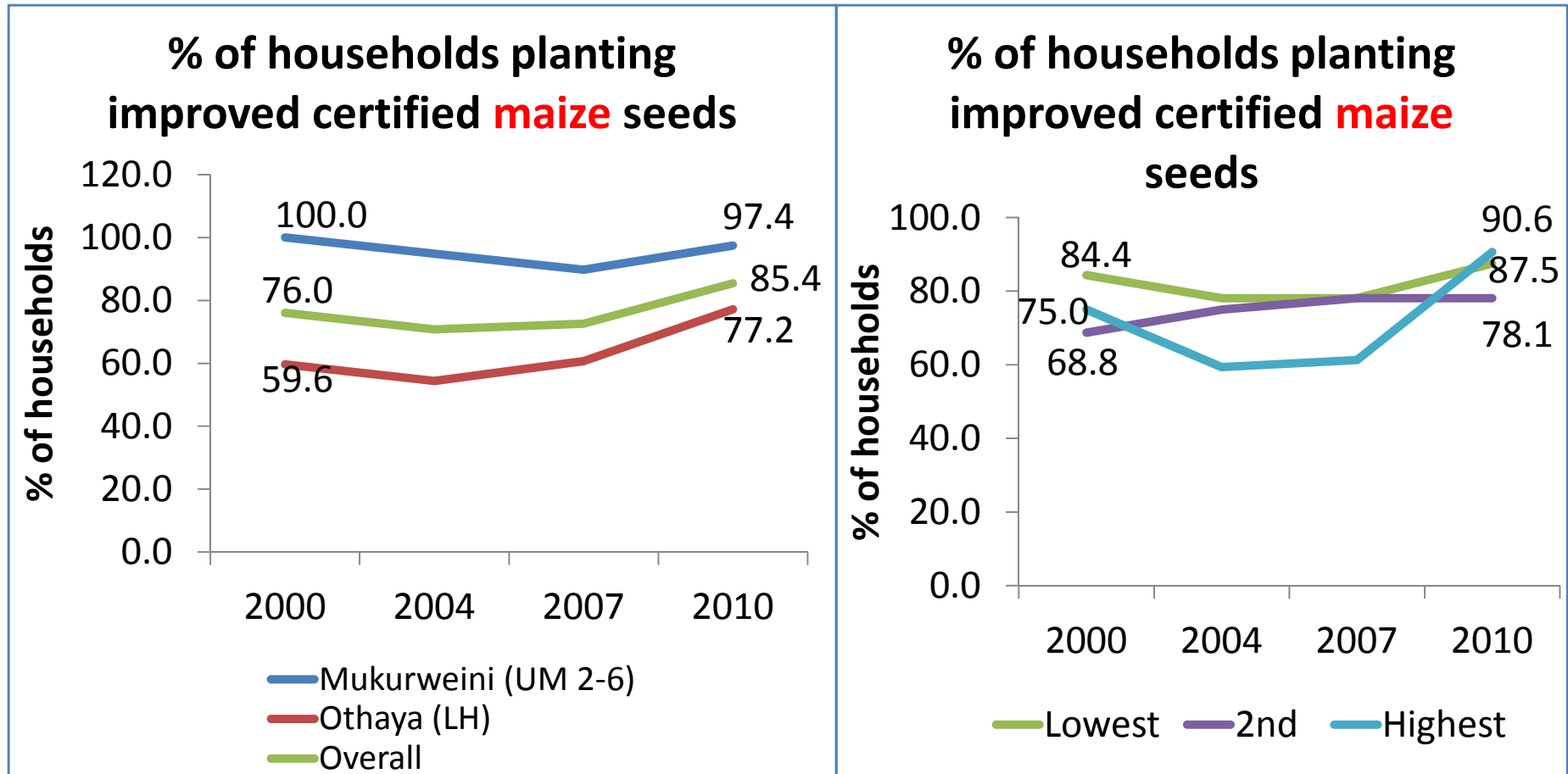
- Application rate declined over time. Decline more in Othaya but rate still higher than in Mukurweini
- Dose rate also declined, but remained higher in Othaya than in Mukurweini
- Dose rate higher than application rate – some cultivated plots don't use fertilizer

Inorganic Fertilizer Application & Dose rate – by income group



- Application rate declined over time for all groups. Rate lowest for lowest income group
- Dose rate also declined, but remained highest for the lowest income group

Percent of households planting improved certified seed for staples



- Adoption rate of improved certified seed for maize generally increased; higher in Mukurweini than Othaya
- General increasing trend across income groups; high even in the lowest income group



Thank you
