Theme	Source	Dataset Title	Variable Name	Variable Type	Reference Period	Resolution	Description	Web
Distance	LSMS-ISA	IHS3 GPS Coordinates	dist_hh	Continuous	N/A	N/A	Plot distance to household	
Distance	NRA	IHS3 GPS Coordinates and Malawi Roads	dist_road	Continuous	N/A	N/A	Household distance to nearest major road (primary and secondary network)	
Distance	World Gazeteer Towns	IHS3 GPS Coordinates and Towns	dist_popcenter	Continuous	N/A	N/A	Household distance to nearest town of > 20,000 pop	
Distance	MoAFS Tech Sec	IHS3 GPS Coordinates and ADMARC Location	dist_admarc	Continuous	N/A	N/A	Household distance to nearest major market (ADMARC locations)	
Distance	World Gazeteer Towns	IHS3 GPS Coordinates and Tobacco Auction Floors	dist_auction	Continuous	N/A	N/A	Household distance to nearest tobacco auction	
Distance	IFPRI	IHS3 GPS Coordinates and Border Posts	dist_borderpost	Continuous	N/A	N/A	Household distance to nearest border post	
Distance	World Gazeteer Towns	IHS3 GPS Coordinates and Towns	dist_boma	Continuous	N/A	N/A	Household distance to the boma of the district of residence	
Climatology	UC Berkeley	WorldClim Bioclimatic Variables	bio_1	Continuous	1960-1990	0.008333 dd	Average annual temperature calculated from monthly climatology, multiplied by 10 (°C)	http://www.worldclim.org/bioclim
Climatology	UC Berkeley	WorldClim Bioclimatic Variables	bio_2	Continuous	1960-1990	0.008333 dd	Average diurnal range (Mean of Max Temp - Min Temp), calculated from monthly climatology	http://www.worldclim.org/bioclim
Climatology	UC Berkeley	WorldClim Bioclimatic Variables	bio_3	Continuous	1960-1990	0.008333 dd	Isothermality, defined as [(bio_2/bio_7)*100]	http://www.worldclim.org/bioclim

Theme	Source	Dataset Title	Variable Name	Variable Type	Reference Period	Resolution	Description	Web
Climatology	UC Berkeley	WorldClim Bioclimatic Variables	bio_4	Continuous	1960-1990	0.008333 dd	Temperature seasonality, standard deviation of monthly climatology, multiplied by 100.	http://www.worldclim.org/bioclim
Climatology	UC Berkeley	WorldClim Bioclimatic Variables	bio_5	Continuous	1960-1990	0.008333 dd	Maximum temperature of the warmest month, from monthly climatology, multiplied by 10. (°C)	http://www.worldclim.org/bioclim
Climatology	UC Berkeley	WorldClim Bioclimatic Variables	bio_6	Continuous	1960-1990	0.008333 dd	Minimum temperature of the coldest month,from monthly climatology, multiplied by 10. (°C)	http://www.worldclim.org/bioclim
Climatology	UC Berkeley	WorldClim Bioclimatic Variables	bio_7	Continuous	1960-1990	0.008333 dd	Temperature annual range, defined as (bio_5-bio_6)	http://www.worldclim.org/bioclim
Climatology	UC Berkeley	WorldClim Bioclimatic Variables	bio_8	Continuous	1960-1990	0.008333 dd	Average temperature of the wettest quarter, from monthly climatology, multiplied by 10. (°C)	http://www.worldclim.org/bioclim
Climatology	UC Berkeley	WorldClim Bioclimatic Variables	bio_9	Continuous	1960-1990	0.008333 dd	Average temperature of the driest quarter, from monthly climatology, multiplied by 10. (°C)	http://www.worldclim.org/bioclim

Theme	Source	Dataset Title	Variable Name	Variable Type	Reference Period	Resolution	Description	Web
Climatology	UC Berkeley	WorldClim Bioclimatic Variables	bio_10	Continuous	1960-1990	0.008333 dd	Average temperature of the warmest quarter, from monthly climatology, multiplied by 10. (°C)	http://www.worldclim.org/bioclim
Climatology	UC Berkeley	WorldClim Bioclimatic Variables	bio_11	Continuous	1960-1990	0.008333 dd	Average temperature of the coldest quarter, from monthly climatology, multiplied by 10. (°C)	http://www.worldclim.org/bioclim
Climatology	UC Berkeley	WorldClim Bioclimatic Variables	bio_12	Continuous	1960-1990	0.008333 dd	Total annual precipitation, from monthly climatology (mm)	http://www.worldclim.org/bioclim
Climatology	UC Berkeley	WorldClim Bioclimatic Variables	bio_13	Continuous	1960-1990	0.008333 dd	Precipitation of wettest month, from monthly climatology (mm)	http://www.worldclim.org/bioclim
Climatology	UC Berkeley	WorldClim Bioclimatic Variables	bio_14	Continuous	1960-1990	0.008333 dd	Precipitation of driest month, from monthly climatology (mm)	http://www.worldclim.org/bioclim
Climatology	UC Berkeley	WorldClim Bioclimatic Variables	bio_15	Continuous	1960-1990	0.008333 dd	Coefficient of Variation of precipitation, from monthly climatology	http://www.worldclim.org/bioclim
Climatology	UC Berkeley	WorldClim Bioclimatic Variables	bio_16	Continuous	1960-1990	0.008333 dd	Precipitation of wettest quarter, from monthly climatology (mm)	http://www.worldclim.org/bioclim
Landscape Typology	ESA and UC Louvain	GlobCover v 2.3	fsrad3_lcmaj	Categorical	2009	0.002778 dd	Majority landcover class within approximately 1km buffer	http://ionia1.esrin.esa.int/

Theme	Source	Dataset Title	Variable Name	Variable Type	Reference Period	Resolution	Description	Web
Landscape Typology	ESA and UC Louvain	GlobCover v 2.3	fsrad3_agpct	Continuous	2009	0.002778 dd	Percent under agriculture within approx 1 km buffer	http://ionia1.esrin.esa.int/
Landscape Typology	IFPRI	IFPRI standardized AEZ based on elevation, climatology	ssa_aez09	Categorical		0.008333 dd	Agro-ecological zones created using WorldClim climate data and 0.0833dd resolution LGP data from IIASA.	http://harvestchoice.org/production/biophysical/agroecology
Soil & Terrain	NASA	SRTM 90m	srtm_eaf	Continuous		0.000833 dd	Elevation (m)	ftp://xftp.jrc.it/pub/srtmV4/arc asci/
Soil & Terrain	USGS	Slope (percent)	afmnslp_pct	Continuous		0.008333 dd	Derived from 90m SRTM	http://pubs.usgs.gov/of/2007/1188/, data provided by USGS upon request
Soil & Terrain	AfSIS	Topographic Wetness Index	twi_mwi	Continuous		0.000833 dd	Derived from modified 90m SRTM. Local upslope contributing area and slope are combined to determine the potential wetness index: WI = ln (A s / tan(b)) where A s is flow accumulation or effective drainage area and b is slope gradient.	http://www.ciesin.columbia.edu/afsis/bafsis_fullmap.htm#
Soil & Terrain	LSMS-ISA	Terrain Roughness	srtm_eaf_5_15	Categorical		0.000833 dd	Derived from 90m SRTM using Meybeck relief classes and 5x5 pixel neighborhood	
Soil & Terrain	FAO	Harmonized World Soil Database	SQ1	Categorical		0.083333 dd	Nutrient availability	http://www.iiasa.ac.at/Research/LUC/External-World-soil-database/HTML/

Theme	Source	Dataset Title	Variable Name	Variable Type	Reference Period	Resolution	Description	Web
Soil & Terrain	FAO	Harmonized World Soil Database	SQ2	Categorical		0.083333 dd	Nutrient retention capacity	http://www.iiasa.ac.at/Research/LUC/External-World-soil-database/HTML/
Soil & Terrain	FAO	Harmonized World Soil Database	SQ3	Categorical		0.083333 dd	Rooting conditions	http://www.iiasa.ac.at/Research/LUC/External-World-soil-database/HTML/
Soil & Terrain	FAO	Harmonized World Soil Database	SQ4	Categorical		0.083333 dd	Oxygen availability to roots	http://www.iiasa.ac.at/Research/LUC/External-World-soil-database/HTML/
Soil & Terrain	FAO	Harmonized World Soil Database	SQ5	Categorical		0.083333 dd	Excess salts	http://www.iiasa.ac.at/Research/LUC/External-World-soil-database/HTML/
Soil & Terrain	FAO	Harmonized World Soil Database	SQ6	Categorical		0.083333 dd	Toxicity	http://www.iiasa.ac.at/Research/LUC/External-World-soil-database/HTML/
Soil & Terrain	FAO	Harmonized World Soil Database	SQ7	Categorical		0.083333 dd	Workability (constraining field management)	http://www.iiasa.ac.at/Research/LUC/External-World-soil-database/HTML/
Crop Season Parameters	NOAA CPC	Rainfall Estimates (RFE)	anntot_avg	Continuous	2001-2011	0.1 dd	Average 12-month total rainfall (mm) for July-June	ftp://ftp.cpc.ncep.noaa.gov/fews/newalgo_est_dekad/
Crop Season Parameters	NOAA CPC	Rainfall Estimates (RFE)	wetQ_avg	Continuous	2001-2011	0.1 dd	Average total rainfall in wettest quarter (mm) within 12-month periods from July-June	ftp://ftp.cpc.ncep.noaa.gov/fews/newalgo_est_dekad/
Crop Season Parameters	NOAA CPC	Rainfall Estimates (RFE)	wetQ_avgstart	Continuous	2001-2011	0.1 dd	Average start of wettest quarter in dekads 1-36, where first dekad of July =1	ftp://ftp.cpc.ncep.noaa.gov/fews/newalgo_est_dekad/
Crop Season Parameters	NOAA CPC	Rainfall Estimates (RFE)	h2009_tot	Continuous	2008-2009	0.1 dd	12-month total rainfall (mm) in July-June, starting July 2008	ftp://ftp.cpc.ncep.noaa.gov/fews/newalgo_est_dekad/

Theme	Source	Dataset Title	Variable Name	Variable Type	Reference Period	Resolution	Description	Web
Crop Season Parameters	NOAA CPC	Rainfall Estimates (RFE)	h2009_wetQ	Continuous	2008-2009	0.1 dd	Total rainfall in wettest quarter (mm) within 12-month period starting July 2008	ftp://ftp.cpc.ncep.noaa.gov/fews/newalgo_est_dekad/
Crop Season Parameters	NOAA CPC	Rainfall Estimates (RFE)	h2009_wetQstart	Continuous	2008-2009	0.1 dd	Start of wettest quarter in dekads 1-36, where first dekad of July 2008 =1	ftp://ftp.cpc.ncep.noaa.gov/fews/newalgo_est_dekad/
Crop Season Parameters	NOAA CPC	Rainfall Estimates (RFE)	h2010_tot	Continuous	2009-2010	0.1 dd	12-month total rainfall (mm) in July-June, starting July 2009	ftp://ftp.cpc.ncep.noaa.gov/fews/newalgo_est_dekad/
Crop Season Parameters	NOAA CPC	Rainfall Estimates (RFE)	h2010_wetQ	Continuous	2009-2010	0.1 dd	Total rainfall in wettest quarter (mm) within 12-month periods starting July 2009	ftp://ftp.cpc.ncep.noaa.gov/fews/newalgo_est_dekad/
Crop Season Parameters	NOAA CPC	Rainfall Estimates (RFE)	h2010_wetQstart	Continuous	2009-2010	0.1 dd	Start of wettest quarter in dekads 1-36, where first dekad of July 2009 =1	ftp://ftp.cpc.ncep.noaa.gov/fews/newalgo_est_dekad/
Crop Season Parameters	BU	MOD12Q2 (DOY 185) Land Cover Dynamics from MODIS	eviarea_avg	Continuous	2001-2010	0.004176 dd	Average total change in greenness (integral of daily EVI values) within primary growing season, averaged by district	ftp://e4ftl01.cr.usgs.gov/MOTA/MCD12Q2.005, DOY185 version provided upon request from MODIS Land Cover Group at Boston University
Crop Season Parameters	BU	MOD12Q2 (DOY 185) Land Cover Dynamics from MODIS	grn_avg	Continuous	2001-2010	0.004176 dd	Average timing of onset of greenness increase in day of year 1-356, where Jul 1 = 1, averaged by district	ftp://e4ftl01.cr.usgs.gov/MOTA/MCD12Q2.005, DOY185 version provided upon request from MODIS Land Cover Group at Boston University

Theme	Source	Dataset Title	Variable Name	Variable Type	Reference Period	Resolution	Description	Web
Crop Season Parameters	BU	MOD12Q2 (DOY 185) Land Cover Dynamics from MODIS	sen_avg	Continuous	2001-2010	0.004176 dd	Average timing of onset of greenness decrease in day of year 1-356, where Jul 1 = 1, averaged by district	ftp://e4ftl01.cr.usgs.gov/MOTA/MCD12Q2.005, DOY185 version provided upon request from MODIS Land Cover Group at Boston University
Crop Season Parameters	BU	MOD12Q2 (DOY 185) Land Cover Dynamics from MODIS	h2009_area	Continuous	2008-2009	0.004176 dd	Total change in greenness (integral of daily EVI values) within primary growing season for July 2008 - Jun 2009, averaged by district	ftp://e4ftl01.cr.usgs.gov/MOTA/MCD12Q2.005, DOY185 version provided upon request from MODIS Land Cover Group at Boston University
Crop Season Parameters	BU	MOD12Q2 (DOY 185) Land Cover Dynamics from MODIS	h2009_grn	Continuous	2008-2009	0.004176 dd	Onset of greenness increase in day of year 1-356, starting July 1 2008, averaged by district	ftp://e4ftl01.cr.usgs.gov/MOTA/MCD12Q2.005, DOY185 version provided upon request from MODIS Land Cover Group at Boston University
Crop Season Parameters	BU	MOD12Q2 (DOY 185) Land Cover Dynamics from MODIS	h2009_sen	Continuous	2008-2009	0.004176 dd	Onset of greenness decrease in day of year 1-356, starting July 1 2008, averaged by district	ftp://e4ftl01.cr.usgs.gov/MOTA/MCD12Q2.005, DOY185 version provided upon request from MODIS Land Cover Group at Boston University
Crop Season Parameters	BU	MOD12Q2 (DOY 185) Land Cover Dynamics from MODIS	h2010_area	Continuous	2009-2010	0.004176 dd	Total change in greenness (integral of daily EVI values) within primary growing season for July 2009 - Jun 2010, averaged by district	ftp://e4ftl01.cr.usgs.gov/MOTA/MCD12Q2.005, DOY185 version provided upon request from MODIS Land Cover Group at Boston University
Crop Season Parameters	BU	MOD12Q2 (DOY 185) Land Cover Dynamics from MODIS	h2010_grn	Continuous	2009-2010	0.004176 dd	Onset of greenness increase in day of year 1-356, starting July 1 2009, averaged by district	ftp://e4ftl01.cr.usgs.gov/MOTA/MCD12Q2.005, DOY185 version provided upon request from MODIS Land Cover Group at Boston University

Theme	Source	Dataset Title	Variable Name	Variable Type	Reference Period	Resolution	Description	Web
Crop Season Parameters	BU	MOD12Q2 (DOY 185) Land Cover Dynamics from MODIS	h2010_sen	Continuous	2009-2010	0.004176 dd	Onset of greenness decrease in day of year 1-356, starting July 1 2009, averaged by district	ftp://e4ftl01.cr.usgs.gov/MOTA/MCD12Q2.005, DOY185 version provided upon request from MODIS Land Cover Group at Boston University

Variable Name	Value	Value Label
SQ1	0	Ocean
SQ1	1	No or Slight Constraint
SQ1	2	Moderate Constraint
SQ1	3	Severe Constraint
SQ1	4	Very Severe Constraint
SQ1	5	Mainly Non-Soil
SQ1	6	Permafrost
SQ1	7	Water
SQ2	0	Ocean
SQ2	1	No or Slight Constraint
SQ2	2	Moderate Constraint
SQ2	3	Severe Constraint
SQ2	4	Very Severe Constraint
SQ2	5	Mainly Non-Soil
SQ2	6	Permafrost
SQ2	7	Water
SQ3	0	Ocean
SQ3	1	No or Slight Constraint
SQ3	2	Moderate Constraint
SQ3	3	Severe Constraint
SQ3	4	Very Severe Constraint
SQ3	5	Mainly Non-Soil
SQ3	6	Permafrost
SQ3	7	Water
SQ4	0	Ocean
SQ4	1	No or Slight Constraint
SQ4	2	Moderate Constraint
SQ4	3	Severe Constraint
SQ4	4	Very Severe Constraint
SQ4	5	Mainly Non-Soil
SQ4	6	Permafrost
SQ4	7	Water
SQ5	0	Ocean
SQ5	1	No or Slight Constraint
SQ5	2	Moderate Constraint
SQ5	3	Severe Constraint
SQ5	4	Very Severe Constraint
SQ5	5	Mainly Non-Soil
SQ5	6	Permafrost
SQ5	7	Water
SQ6	0	Ocean
SQ6	1	No or Slight Constraint
SQ6	2	Moderate Constraint
SQ6	3	Severe Constraint
SQ6	4	Very Severe Constraint
SQ6	5	Mainly Non-Soil
SQ6	6	Permafrost
SQ6	7	Water
SQ7	0	Ocean
SQ7	1	No or Slight Constraint
SQ7	2	Moderate Constraint

Variable Name	Value	Value Label
SQ7	3	Severe Constraint
SQ7	4	Very Severe Constraint
SQ7	5	Mainly Non-Soil
SQ7	6	Permafrost
SQ7	7	Water
ssa_aez09	101	Temperate / arid
ssa_aez09	102	Temperate / Semi-arid
ssa_aez09	103	Temperate / sub-humid
ssa_aez09	104	Temperate / humid
ssa_aez09	211	Subtropic - warm / arid
ssa_aez09	212	Subtropic - warm / semiarid
ssa_aez09	213	Subtropic - warm / subhumid
ssa_aez09	214	Subtropic - warm / humid
ssa_aez09	221	Subtropic - cool / arid
ssa_aez09	222	Subtropic - cool / semiarid
ssa_aez09	223	Subtropic - cool / subhumid
ssa_aez09	224	Subtropic - cool / humid
ssa_aez09	311	Tropic - warm / arid
ssa_aez09	312	Tropic - warm / semiarid
ssa_aez09	313	Tropic - warm / subhumid
ssa_aez09	314	Tropic - warm / humid
ssa_aez09	321	Tropic - cool / arid
ssa_aez09	322	Tropic - cool / semiarid
ssa_aez09	323	Tropic - cool / subhumid
ssa_aez09	324	Tropic - cool / humid
ssa_aez09	400	Boreal
fsrad3_lcmaj	11	Post-flooding or irrigated croplands (or aquatic)
fsrad3_lcmaj	14	Rainfed croplands
fsrad3_lcmaj	20	Mosaic cropland (50-70%) / vegetation (grassland/shrubland/forest) (20-50%)
fsrad3_lcmaj	30	Mosaic vegetation (grassland/shrubland/forest) (50-70%) / cropland (20-50%)
fsrad3_lcmaj	40	Closed to open (>15%) broadleaved evergreen or semi-deciduous forest (>5m)
fsrad3_lcmaj	50	Closed (>40%) broadleaved deciduous forest (>5m)
fsrad3_lcmaj	60	Open (15-40%) broadleaved deciduous forest/woodland (>5m)
fsrad3_lcmaj	70	Closed (>40%) needleleaved evergreen forest (>5m)
fsrad3_lcmaj	90	Open (15-40%) needleleaved deciduous or evergreen forest (>5m)
fsrad3_lcmaj	100	Closed to open (>15%) mixed broadleaved and needleleaved forest (>5m)
fsrad3_lcmaj	110	Mosaic forest or shrubland (50-70%) / grassland (20-50%)
fsrad3_lcmaj	120	Mosaic grassland (50-70%) / forest or shrubland (20-50%)
fsrad3_lcmaj	130	Closed to open (>15%) (broadleaved or needleleaved, evergreen or deciduous) shrubland (<5m)
fsrad3_lcmaj	140	Closed to open (>15%) herbaceous vegetation (grassland, savannas or lichens/mosses)
fsrad3_lcmaj	150	Sparse (<15%) vegetation

Variable Name	Value	Value Label
fsrad3_lcmaj	160	Closed to open (>15%) broadleaved forest regularly flooded (semi-permanently or temporarily) - Fresh or brackish water
fsrad3_lcmaj	170	Closed (>40%) broadleaved forest or shrubland permanently flooded - Saline or brackish water
fsrad3_lcmaj	180	Closed to open (>15%) grassland or woody vegetation on regularly flooded or waterlogged soil - Fresh, brackish or saline water
fsrad3_lcmaj	190	Artificial surfaces and associated areas (Urban areas >50%)
fsrad3_lcmaj	200	Bare areas
fsrad3_lcmaj	210	Water bodies
fsrad3_lcmaj	220	Permanent snow and ice
fsrad3_lcmaj	230	No data (burnt areas, clouds,…)
srtm_eaf_5_15	1	Plains
srtm_eaf_5_15	2	Mid-altitude plains
srtm_eaf_5_15	3	High-altitude plains
srtm_eaf_5_15	4	Lowlands
srtm_eaf_5_15	5	Rugged lowlands
srtm_eaf_5_15	6	Platforms (very low plateaus)
srtm_eaf_5_15	7	Low plateaus
srtm_eaf_5_15	8	Mid-altitude plateaus
srtm_eaf_5_15	9	High plateaus
srtm_eaf_5_15	10	Very high plateaus
srtm_eaf_5_15	11	Hills
srtm_eaf_5_15	12	Low mountains
srtm_eaf_5_15	13	Mid altitude mountains
srtm_eaf_5_15	14	High mountains
srtm_eaf_5_15	15	Very high mountains