

EPSG: 5880

SIRGAS 2000 / BRAZIL POLYCONIC 🇧🇷

PROJECTION TYPE: AMERICAN POLYCONIC
SURFACE ASPECT: NORMAL (CENTERED 0°, 54° W)
DEVELOPABLE SURFACE: CONIC (POLYCONIC)
DISTORTS: SCALE, DISTANCE, DIRECTION
PRESERVES: REASONABLE PRESERVATION OF SHAPE AND AREA IN BRAZIL.

THIS PROJECTION IS SUITABLE FOR NATIONAL-SCALE MAPPING OF BRAZIL, BECAUSE IT UTILIZES THE OFFICIALLY ADOPTED SIRGAS 2000 DATUM. AS A POLYCONIC PROJECTION, IT HANDLES BRAZIL'S LARGE NORTH-SOUTH EXTENT WHILE REASONABLY PRESERVING SHAPE AND AREA. ITS NORMAL ORIENTATION, CENTERED ON 54° W, REDUCES DISTORTION ACROSS THE INTERIOR. HOWEVER, IT DOES NOT PRESERVE SCALE, DISTANCE, OR DIRECTION, AND DISTORTION INCREASES QUICKLY OUTSIDE BRAZIL.



EPSG: 2163*

US NATIONAL ATLAS EQUAL AREA 🇺🇸

PROJECTION TYPE: LAMBERT AZIMUTHAL EQUAL AREA
SURFACE ASPECT: AZIMUTHAL (CENTERED 45°N, 100°W)
DEVELOPABLE SURFACE: PLANAR (AZIMUTHAL)
DISTORTS: SHAPE, DISTANCE (EXCEPT RADIAL)

THIS PROJECTION IS OFTEN USED FOR NATIONAL-SCALE MAPPING OF THE UNITED STATES BECAUSE IT MAINTAINS ACCURATE AREA RELATIONSHIPS ACROSS THE COUNTRY, MAKING IT WELL-SUITED FOR THEMATIC AND STATISTICAL ANALYSIS. THE AZIMUTHAL CENTERING AT 45°N, 100°W HELPS BALANCE DISTORTION ACROSS THE LOWER 48 STATES. WHILE THE PROJECTION DISTORTS SHAPE AND DISTANCE AWAY FROM RADIAL DIRECTIONS, IT OFFERS MORE CONSISTENT AREA PRESERVATION AND BALANCE COMPARED TO MANY CYLINDRICAL OR NON-EQUAL AREA CONIC OPTIONS.

PRESERVES: AREA
*DEPRECATED DUE TO SPHERICAL MODEL



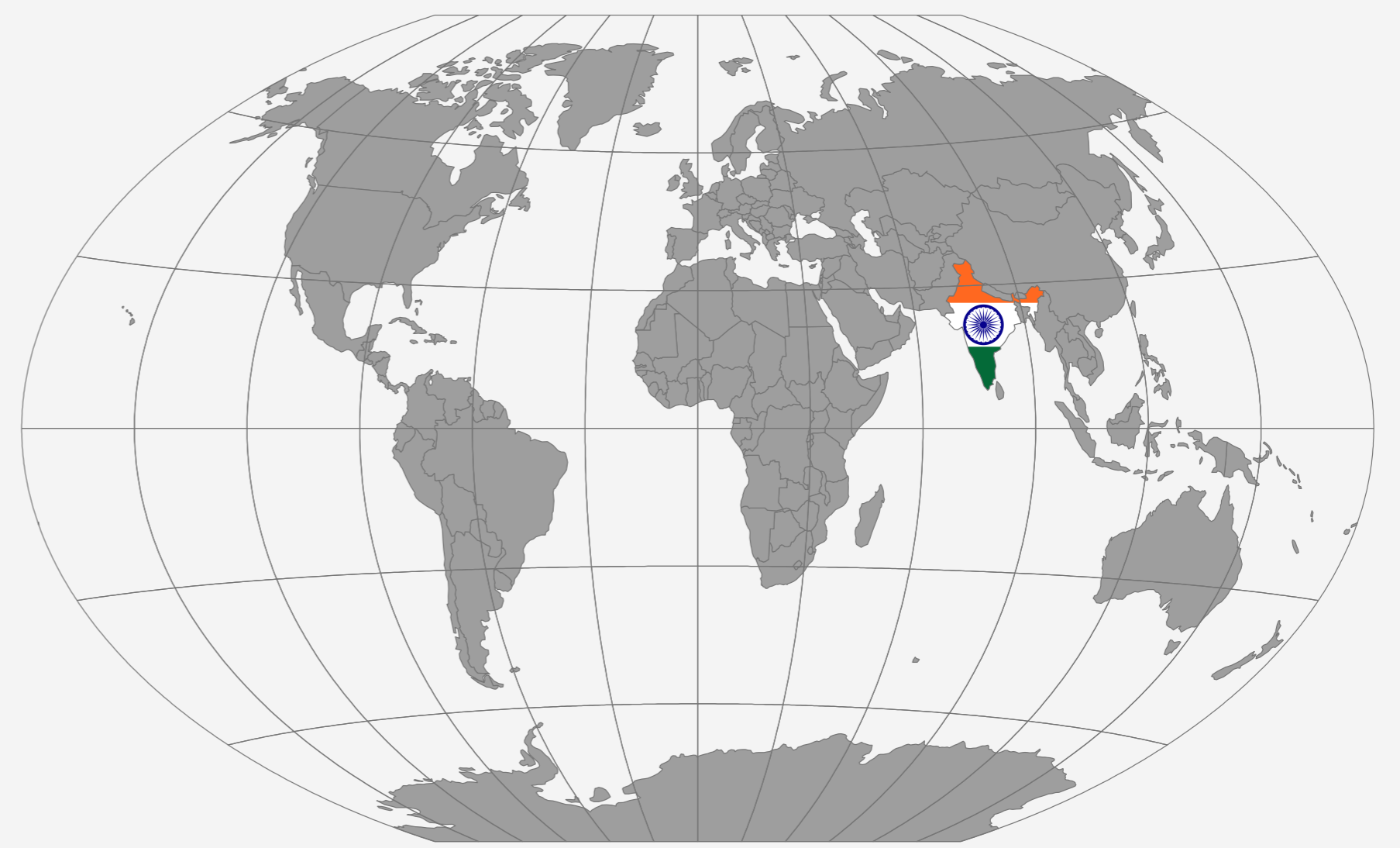
EPSG: 32753*

WGS 84 / UTM ZONE 53S 🇮🇩

PROJECTION TYPE: CYLINDRICAL (TRANSVERSE MERCATOR)
SURFACE ASPECT: NORMAL (CENTERED ON 135° E)*
DEVELOPABLE SURFACE: CYLINDRICAL
DISTORTS: SCALE, DISTANCE INCREASING FROM 135° E
PRESERVES: SHAPE, DIRECTION

THIS PROJECTION IS WELL-SUITED FOR MAPPING INDONESIA BECAUSE IT WAS MODIFIED TO USE A CUSTOM CENTRAL MERIDIAN AT 120°E, WHICH BETTER ALIGNS WITH THE COUNTRY'S GEOGRAPHIC CENTER. AS A TRANSVERSE MERCATOR PROJECTION, IT PRESERVES SHAPE AND DIRECTION ACCURATELY NEAR THE CENTRAL MERIDIAN, MAKING IT EFFECTIVE FOR REGIONAL-SCALE MAPPING. HOWEVER, SCALE AND DISTANCE DISTORTION INCREASE AWAY FROM 120°E, AND THE PROJECTION DOES NOT PRESERVE AREA, WHICH LIMITS ITS USE IN BROADER CONTEXTS.

*CENTRAL MERIDIAN SHIFTED TO 120° E (STANDARD EPSG:32753 USES 135° E)

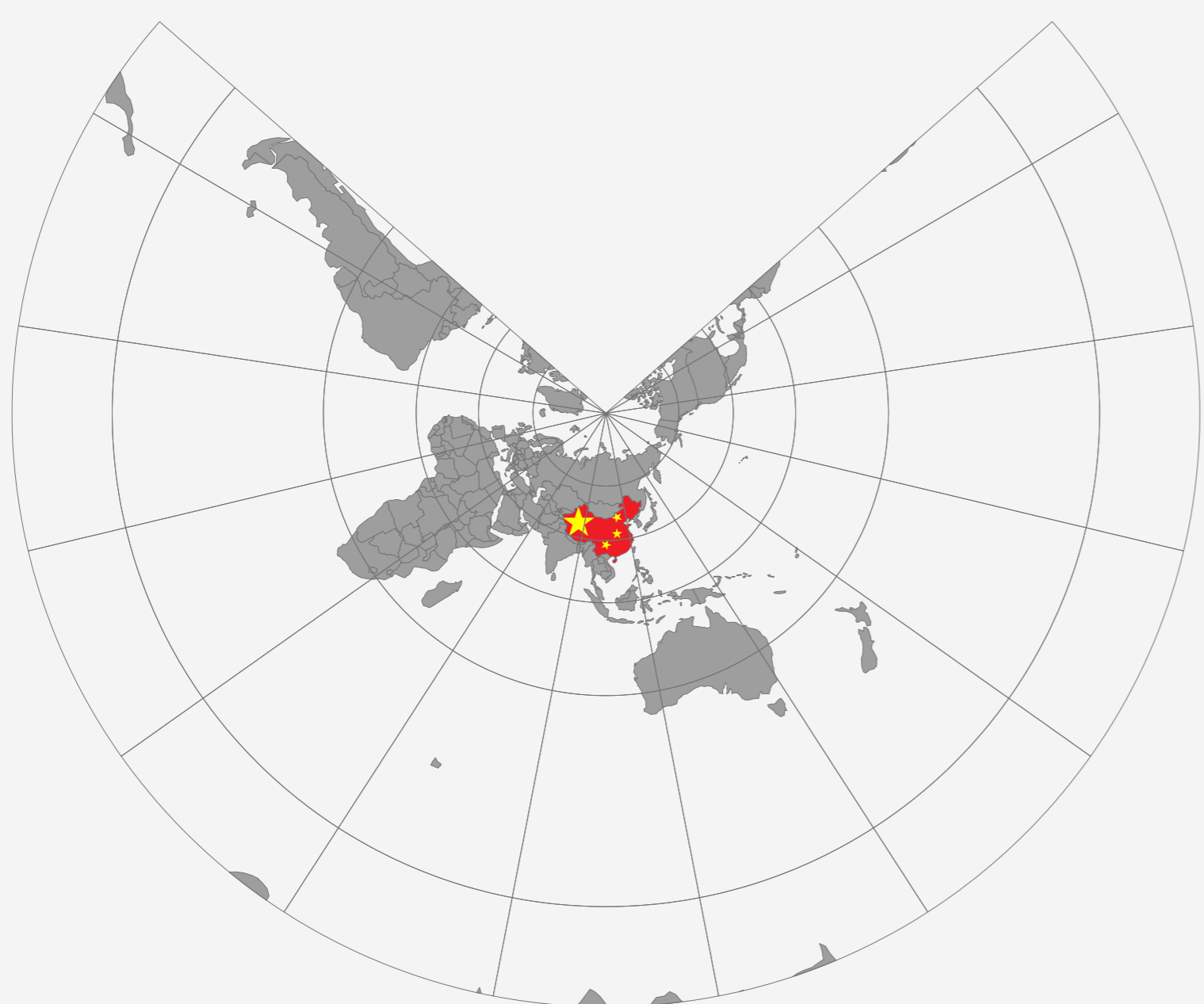


ESRI: 54042

WINKEL TRIPLE NGS 🇮🇳

PROJECTION TYPE: COMPROMISE
SURFACE ASPECT: NORMAL (CENTRAL MERIDIAN 0°)
DEVELOPABLE SURFACE: PSEUDO-CYLINDRICAL
DISTORTS: SHAPE, AREA, SCALE, DISTANCE, AND DIRECTION
PRESERVES: OVERALL BALANCE — MINIMIZES EXTREMES OF DISTORTION ACROSS ALL PROPERTIES

THIS PROJECTION IS WELL-SUITED FOR GLOBAL-SCALE MAPPING BECAUSE IT MINIMIZES OVERALL DISTORTION THROUGH A DESIGNED COMPROMISE. AS A WINKEL TRIPLE PROJECTION, IT COMBINES ELEMENTS OF CYLINDRICAL AND AZIMUTHAL METHODS TO BALANCE SHAPE, AREA, AND DIRECTION, WITHOUT PERFECTLY PRESERVING ANY SINGLE PROPERTY. WITH A CENTRAL MERIDIAN AT 0°, IT PROVIDES A VISUALLY PLEASING AND BALANCED WORLD VIEW, MAKING IT IDEAL FOR GENERAL REFERENCE MAPS BUT UNSUITED TO PRECISE MEASUREMENT OR ANALYSIS.



ESRI: 102012

ASIA LAMBERT CONFORMAL CONIC 🇨🇳

PROJECTION TYPE: CONFORMAL CONIC
SURFACE ASPECT: NORMAL (CENTRAL MERIDIAN 105° E)
DEVELOPABLE SURFACE: CONIC (PARALLELS AT 30° N AND 62° N)
DISTORTS: AREA, SCALE, DISTANCE
PRESERVES: SHAPE (LOCALLY), ANGLES (CONFORMAL PROPERTY)

THIS PROJECTION IS WELL-SUITED FOR ASIA-REGIONAL MAPPING BECAUSE IT USES A LAMBERT CONFORMAL CONIC DESIGN TO BALANCE SHAPE PRESERVATION ACROSS THE EAST-WEST EXTENT WITH STANDARD PARALLELS AND A CENTRAL MERIDIAN AT 105°E. IT MINIMIZES DISTORTION IN MID-LATITUDE ZONES. THE PROJECTION PRESERVES SHAPE AND ANGLE LOCALLY, BUT SCALE, AREA, AND DISTANCE VARY WITH DISTANCE FROM THE PARALLELS, LIMITING ITS USE FOR EXACT METRIC ANALYSIS.



ESRI: 102020

SOUTH POLE LAMBERT AZIMUTHAL EQUAL AREA 🇲🇵

PROJECTION TYPE: AZIMUTHAL
SURFACE ASPECT: POLAR / NORMAL (FOCUS AT SOUTH POLE)
DEVELOPABLE SURFACE: AZIMUTHAL / PLANAR (CENTERED AT SOUTH POLE)
DISTORTS: SHAPE, SCALE, DISTANCE, DIRECTION
PRESERVES: AREA

THIS PROJECTION IS INTENDED FOR MAPPING THE ANTARCTIC REGION BECAUSE IT PLACES THE SOUTH POLE AT THE CENTER WHILE PRESERVING AREA THROUGH AN AZIMUTHAL EQUAL AREA TRANSFORMATION. IT OFFERS A BALANCED VIEW OF THE SOUTHERN HEMISPHERE WITH MINIMAL AREA DISTORTION. HOWEVER, SHAPE, DIRECTION, SCALE, AND DISTANCE ARE NOT MAINTAINED, AND DISTORTION GROWS WITH DISTANCE FROM THE POLE, MAKING IT USEFUL FOR THE POLAR CONTEXT BUT UNSUITABLE FOR BROAD REGIONAL USE.

A COMPARATIVE LOOK AT MAP PROJECTIONS

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